

INVITATION TO TENDER

RETURN BIDS TO:

Bid Receiving / Agriculture and Agri-Food Canada

Agriculture and Agri-Food Canada
 Eastern Service Centre
 Tender Receiving Unit
 2001 Robert-Bourassa Blvd., Suite 671-TEN
 Montréal, Quebec
 H3A 3N2

TENDER TO:

Agriculture and Agri-Food Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the construction listed herein and on any attached sheets at the price(s) set out therefor.

Comments

ISSUING OFFICE

Agriculture and Agri-Food Canada
 Eastern Service Centre
 Tender Receiving Unit
 2001 Robert-Bourassa Blvd., Suite 671-TEN
 Montréal, Quebec
 H3A 3N2

Title	
Washroom Modernizati on Phase II	
Solicitation No.	Date
01B46-15-0034	2015-10-21
Client Reference No.	
1516-144110-P06	
File No.	
01B46-15-0034	
Solicitation Closes:	
Thursday, November 12, 2015, at 02:00 PM, EST.	
F.O.B	
<input type="radio"/> Plant <input checked="" type="radio"/> Destination <input type="radio"/> Other	
Address Enquiries to:	
Gabri el l e Rai na Pl ouffe	
Title:	
Seni or Contracting Offi cer & Instal lations Management	
Email:	
gabri el l e. pl ouffe@agr. gc. ca	
Telephone Number Ext.	Fax Number
514 315-6123	514 283-3143
Destination	
Greenhouse and Processing Crops Research Centre 2585 County Road 20 Harrow, ON, NOR 1G0	

Instructions: See Herein

Delivery Required	Delivery Offered
February 22, 2016	
Vendor / Firm Name and Address	
Telephone Number Ext.	Fax Number
Name and title of person authorized to sign on behalf of Vendor / Firm (type or print)	
Signature	Date
_____	_____



Appendix "A"

GENERAL INSTRUCTIONS TO BIDDERS

GENERAL INSTRUCTIONS TO BIDDERS

- GI01 Completion of Bid
- GI02 Identity or Legal Capacity of the Bidder
- GI03 Applicable Taxes
- GI04 Capital Development and Redevelopment Charges
- GI05 Registry and Pre-qualification of Floating Plant
- GI06 Listing of Subcontractors and Suppliers
- GI07 Bid Security Requirements
- GI08 Submission of Bid
- GI09 Revision of Bid
- GI10 Rejection of Bid
- GI11 Bid Costs
- GI12 Compliance with Applicable Laws
- GI13 Approval of Alternative Materials
- GI14 Conflict of Interest – Unfair Advantage

GI01 COMPLETION OF BID

- 1) The bid shall be:
 - (a) submitted on the BID AND ACCEPTANCE FORM provided by AAFC with the bid package or on a clear and legible reproduced copy of such BID AND ACCEPTANCE FORM that must be identical in content and format to the BID AND ACCEPTANCE FORM provided by AAFC;
 - (b) based on the Bid Documents listed in the Special Instructions to Bidders;
 - (c) correctly completed in all respects;
 - (d) signed, with an original signature, by a duly authorized representative of the Bidder; and
 - (e) accompanied by
 - (i) bid security as specified in GI07; and
 - (ii) any other document or documents specified elsewhere in the solicitation where it is stipulated that said documents are to accompany the bid.
- 2) Subject to paragraph 6) of GI10, any alteration to the pre-printed or pre-typed sections of the Bid and Acceptance Form, or any condition or qualification placed upon the bid shall be cause for disqualification. Alterations, corrections, changes or erasures made to statements or figures entered on the Bid and Acceptance Form by the Bidder shall be initialed by the person or persons signing the bid. Alterations, corrections, changes or erasures that are not initialed shall be deemed void and without effect.
- 3) Unless otherwise noted elsewhere in the Bid Documents, facsimile copies of bids are not acceptable.

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

GI02 IDENTITY OR LEGAL CAPACITY OF THE BIDDER

- 1) In order to confirm the authority of the person or persons signing the bid or to establish the legal capacity under which the Bidder proposes to enter into Contract, any Bidder who carries on business in other than its own personal name shall, if requested by Canada, provide satisfactory proof of
 - (a) such signing authority; and
 - (b) the legal capacity under which it carries on business;

prior to contract award. Proof of signing authority may be in the form of a certified copy of a resolution naming the signatory(ies) that is (are) authorized to sign this bid on behalf of the corporation or partnership. Proof of legal capacity may be in the form of a copy of the articles of incorporation or the registration of the business name of a sole proprietor or partnership.

GI03 APPLICABLE TAXES

- 1) "Applicable Taxes" means the Goods and Services Tax (GST), the Harmonized Sales Tax (HST), and any provincial tax, by law, payable by Canada such as, the Quebec Sales Tax (QST) as of April 1, 2013.

GI04 CAPITAL DEVELOPMENT AND REDEVELOPMENT CHARGES

- 1) For the purposes of GC1.8 LAWS, PERMITS AND TAXES in the General Conditions of the Contract, only fees or charges directly related to the processing and issuing of building permits shall be included. The Bidder shall not include any monies in the bid amount for special municipal development, redevelopment or other fees or charges which a municipal authority may seek as a prerequisite to the issuance of building permits.

GI05 REGISTRY AND PRE-QUALIFICATION OF FLOATING PLANT

- 1) Dredges or other floating plant to be used in the performance of the Work must be of Canadian registry. For dredges or other floating plant that are not of Canadian make or manufacture, the Bidder must obtain a certificate of qualification from Industry Canada and this certificate must accompany the bid. Plant so qualified by Industry Canada may be accepted on this project.

GI06 LISTING OF SUBCONTRACTORS AND SUPPLIERS

- 1) Notwithstanding any list of Subcontractors that the Bidder may be required to submit as part of the bid, the Bidder shall, within 48 hours of receipt of a notice to do so, submit all information requested in the said notice including the names of Subcontractors and Suppliers for the part or parts of the Work listed. Failure to do so shall result in the disqualification of its bid.

GI07 BID SECURITY REQUIREMENTS

- 1) The Bidder shall submit bid security with the bid in the form of a bid bond or a security deposit in an amount that is equal to not less than 10 percent of the bid amount. Applicable Taxes shall not be included when calculating the amount of any bid security that may be required. The maximum amount of bid security required with any bid is \$2,000,000.00.

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

- 2) A bid bond shall be in an approved form <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appS>, properly completed, with original signature(s) and issued by an approved company whose bonds are acceptable to Canada either at the time of solicitation closing or as identified in Treasury Board Appendix L: [Acceptable Bonding Companies](#).
- 3) A security deposit shall be an original, properly completed, signed where required and be either:
 - (a) a bill of exchange, bank draft or money order made payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or
 - (b) bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada;
- 4) For the purposes of subparagraph 3) (a) of GI07
 - (a) a bill of exchange is an unconditional order in writing signed by the Bidder and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable future time a sum certain of money to, or to the order of, the Receiver General for Canada;
 - (b) if a bill of exchange, bank draft or money order is certified by or drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in subparagraph 4.c. of GI07, either by letter or by a stamped certification on the bill of exchange, bank draft or money; and
 - (c) An approved financial institution is:
 - (i) a corporation or institution that is a member of the Canadian Payments Association as defined in the [Canadian Payments Act](#);
 - (ii) a corporation that accepts deposits that are insured, to the maximum permitted by law, by the Canada Deposit Insurance Corporation or the "Autorité des marchés financiers";
 - (iii) a corporation that accepts deposits from the public if repayment of the deposit is guaranteed by Her Majesty the Queen in right of a province;
 - (iv) a corporation, association or federation incorporated or organized as a credit union or co-operative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137(6) of the [Income Tax Act](#); or
 - (v) Canada Post Corporation.
- 5) Bonds referred to in subparagraph 3)(b) of GI07 shall be provided on the basis of their market value current at the date of solicitation closing, and shall be:
 - (a) payable to bearer;
 - (b) accompanied by a duly executed instrument of transfer of the bonds to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations; or
 - (c) registered as to principal or as to principal and interest in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations.

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

- 6) As an alternative to a security deposit an irrevocable standby letter of credit is acceptable to Canada and the amount shall be determined in the same manner as a security deposit referred to above.
- 7) An irrevocable standby letter of credit referred to in paragraph 6) of GI07 shall
 - (a) be an arrangement, however named or described, whereby a financial institution (the "Issuer") acting at the request and on the instructions of a customer (the "Applicant) or on its own behalf,
 - (i) is to make a payment to, or to the order of, the Receiver General for Canada as the beneficiary;
 - (ii) is to accept and pay bills of exchange drawn by the Receiver General for Canada;
 - (iii) authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
 - (iv) authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with;
 - (b) state the face amount which may be drawn against it;
 - (c) state its expiry date;
 - (d) provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the Departmental Representative identified in the letter of credit by his/her office;
 - (e) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
 - (f) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600; pursuant to the ICC UCP; a credit is irrevocable even if there is no indication to that effect; and
 - (g) be issued or confirmed, in either official language, by a financial institution which is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.
- 8) Bid security shall lapse or be returned as soon as practical following:
 - (a) the solicitation closing date, for those Bidders submitting non-compliant bids; and
 - (b) the administrative bid review, for those Bidders submitting compliant bids ranked fourth to last on the schedule of bids; and
 - (c) the award of contract, for those Bidders submitting the second and third ranked bids; and
 - (d) the receipt of contract security, for the successful Bidder; or
 - (e) the cancellation of the solicitation, for all Bidders.
- 9) Notwithstanding the provisions of paragraph 8) of GI07 and provided more than three compliant bids have been received, if one or more of the bids ranked third to first is withdrawn or rejected

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

for whatever reason then Canada reserves the right to hold the security of the next highest ranked compliant bid in order to retain the bid security of at least three valid and compliant bids.

GI08 SUBMISSION OF BID

- 1) The Bid and Acceptance Form, duly completed, and the bid security shall be enclosed and sealed in an envelope provided by the Bidder, and shall be addressed and submitted to the office designated on the INVITATION TO TENDER Form for the receipt of bids. The bid must be received on or before the date and time set for solicitation closing.
- 2) Unless otherwise specified in the Special Instructions to Bidders
 - (a) the bid shall be in Canadian currency;
 - (b) exchange rate fluctuation protection is not offered; and
 - (c) any request for exchange rate fluctuation protection shall not be considered.
- 3) Prior to submitting the bid, the Bidder shall ensure that the following information is clearly printed or typed on the face of the bid envelope:
 - (a) Solicitation Number;
 - (b) Name of Bidder;
 - (c) Return address; and
 - (d) Closing Date and Time.
- 4) Timely and correct delivery of bids is the sole responsibility of the Bidder.

GI09 REVISION OF BID

- 1) A bid submitted in accordance with these instructions may be revised by letter or facsimile provided the revision is received at the office designated for the receipt of bids, on or before the date and time set for the closing of the solicitation. The letter or facsimile shall be on the Bidder's letterhead or bear a signature that identifies the Bidder;
- 2) A revision to a bid that includes unit prices must clearly identify the changes(s) in the unit price(s) and the specific item(s) to which each change applies.
- 3) A letter or facsimile submitted to confirm an earlier revision shall be clearly identified as a confirmation.
- 4) Failure to comply with any of the above provisions shall result in the rejection of the non-compliant revision(s) only. The bid shall be evaluated based on the original bid submitted and all other compliant revision(s).

GI10 REJECTION OF BID

- 1) Canada may accept any bid, whether it is the lowest or not, or may reject any or all bids.
- 2) Without limiting the generality of paragraph 1) of GI10, Canada may reject a bid if any of the following circumstances is present:

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

- (a) the Bidder, or any employee or subcontractor included as part of the bid, has been convicted under Section 121 ("Frauds on the government" & "Contractor subscribing to election fund"), 124 "Selling or purchasing office"), 380 ("Fraud committed against Her Majesty") or 418 ("Selling defective stores to Her Majesty") of the Criminal Code of Canada, or under paragraph 80(1)(d) ("False entry, certificate or return"), subsection 80(2) ("Fraud against Her Majesty") or Section 154.01 ("Fraud against Her Majesty") of the *Financial Administration Act*;
 - (b) the Bidder's bidding privileges are suspended or are in the process of being suspended;
 - (c) the bidding privileges of any employee or subcontractor included as part of the bid are suspended or are in the process of being suspended, which suspension or pending suspension would render that employee or subcontractor ineligible to bid on the Work, or the portion of the Work the employee or subcontractor is to perform;
 - (d) the Bidder is bankrupt, or where for whatever reason, its activities are rendered inoperable for an extended period;
 - (e) evidence, satisfactory to Canada, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination, has been received with respect to the Bidder, any of its employees or any subcontractor included as part of its bid;
 - (f) evidence satisfactory to Canada that based on past conduct or behavior, the Bidder, a sub-contractor or a person who is to perform the Work is unsuitable or has conducted himself/herself improperly;
 - (g) with respect to current or prior transactions with Canada
 - (i) Canada has exercised, or intends to exercise, the contractual remedy of taking the work out of the contractor's hands with respect to a contract with the Bidder, any of its employees or any subcontractor included as part of its bid; or
 - (ii) Canada determines that the Bidder's performance on other contracts is sufficiently poor to jeopardize the successful completion of the requirement being bid on.
- 3) In assessing the Bidder's performance on other contracts pursuant to subparagraph 2)(g)(ii) of GI10, Canada may consider, but not be limited to, such matters as:
- (a) the quality of workmanship in performing the Work;
 - (b) the timeliness of completion of the Work;
 - (c) the overall management of the Work and its effect on the level of effort demanded of the department and its representative; and
 - (d) the completeness and effectiveness of the Contractor's safety program during the performance of the Work.
- 4) Without limiting the generality of paragraphs 1), 2) and 3) of GI10, Canada may reject any bid based on an unfavourable assessment of the:
- (a) adequacy of the bid price to permit the work to be carried out and, in the case of a bid

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

providing prices per unit or a combination of lump sum and prices per unit, whether each such price reasonably reflects the cost of performing the part of the work to which that price applies;

- (b) Bidder's ability to provide the necessary management structure, skilled personnel, experience and equipment to perform competently the work under the Contract; and
 - (c) Bidder's performance on other contracts.
- 5) Where Canada intends to reject a bid pursuant to a provision of paragraphs 1), 2), 3) or 4) of GI10, other than subparagraph 2)(g) of IT10, the contracting authority will inform the Bidder and provide the Bidder ten (10) days within which to make representations, before making a final decision on the bid rejection.
- 6) Canada may waive informalities and minor irregularities in bids received if Canada determines that the variation of the bid from the exact requirements set out in the Bid Documents can be corrected or waived without being prejudicial to other Bidders.

GI11 BID COSTS

- 1) No payment will be made for costs incurred in the preparation and submission of a bid in response to the bid solicitation. Costs associated with preparing and submitting a bid, as well as any costs incurred by the Bidder associated with the evaluation of the bid, are the sole responsibility of the Bidder.

GI12 COMPLIANCE WITH APPLICABLE LAWS

- 1) By submission of a bid, the Bidder certifies that the Bidder has the legal capacity to enter into a contract and is in possession of all valid licences, permits, registrations, certificates, declarations, filings, or other authorizations necessary to comply with all federal, provincial and municipal laws and regulations applicable to the submission of the bid and entry into any ensuing contract for the performance of the work.
- 2) For the purpose of validating the certification in paragraph 1) of GI12, a Bidder shall, if requested, provide a copy of every valid licence, permit, registration, certificate, declaration, filing or other authorization listed in the request, and shall provide such documentation within the time limit(s) set out in the said request.
- 3) Failure to comply with the requirements of paragraph 2) of GI12 shall result in disqualification of the bid.

GI13 APPROVAL OF ALTERNATIVE MATERIALS

- 1) When materials are specified by trade names or trademarks, or by manufacturers' or suppliers' names, the bid shall be based on use of the named materials. During the solicitation period, alternative materials may be considered provided full technical data is received in writing by the Contracting Officer at least 10 calendar days prior to the solicitation closing date.

GI14 CONFLICT OF INTEREST - UNFAIR ADVANTAGE

- 1) In order to protect the integrity of the procurement process, bidders are advised that Canada may reject a bid in the following circumstances:

GENERAL INSTRUCTIONS TO BIDDERS (Continued)

- (a) if the Bidder, any of its subcontractors, any of their respective employees or former employees was involved in any manner in the preparation of the bid solicitation or in any situation of conflict of interest or appearance of conflict of interest;
 - (b) if the Bidder, any of its subcontractors, any of their respective employees or former employees had access to information related to the bid solicitation that was not available to other bidders and that would, in Canada's opinion, give or appear to give the Bidder an unfair advantage.
- 2) The experience acquired by a bidder who is providing or has provided the goods and services described in the bid solicitation (or similar goods or services) will not, in itself, be considered by Canada as conferring an unfair advantage or creating a conflict of interest. This bidder remains however subject to the criteria established above.
- 3) Where Canada intends to reject a bid under this section, the Contracting Authority will inform the Bidder and provide the Bidder an opportunity to make representations before making a final decision. Bidders who are in doubt about a particular situation should contact the Contracting Authority before bid closing. By submitting a bid, the Bidder represents that it does not consider itself to be in conflict of interest nor to have an unfair advantage. The Bidder acknowledges that it is within Canada's sole discretion to determine whether a conflict of interest, unfair advantage or an appearance of conflict of interest or unfair advantage exists.



Appendix "B"

SPECIAL INSTRUCTIONS TO BIDDERS

SPECIAL INSTRUCTIONS TO BIDDERS (SI)

SI01	Bid Documents
SI02	Enquiries during the Solicitation Period
SI03	Non-Mandatory Site Visit
S104	Revision of Bid
S105	Bid Results
SI06	Insufficient Funds
SI07	Bid Validity Period
SI08	Construction Documents
SI09	Web Sites
SI10	Personnel Security Requirements

SI01 BID DOCUMENTS

- 1) The following are the bid documents:
 - (a) INVITATION TO TENDER - Page 1 form AAFC / AAC5323-E;
 - (b) SPECIAL INSTRUCTIONS TO BIDDERS form AAFC / AAC5301-E;
 - (c) GENERAL INSTRUCTIONS TO BIDDERS form AAFC / AAC5313-E;
 - (d) Clauses and Conditions identified in "CONTRACT DOCUMENTS";
 - (e) Drawings and Specifications;
 - (f) BID AND ACCEPTANCE form AAFC / AAC5320-E and any Appendices attached thereto; and,
 - (g) Any amendment issued prior to solicitation closing.

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

SI02 ENQUIRIES DURING THE SOLICITATION PERIOD

- 1) Enquiries regarding this bid must be submitted in writing to the Contracting Officer named on the INVITATION TO TENDER - Page 1 as early as possible within the solicitation period. Except for the approval of alternative materials as described in G113 of the GENERAL INSTRUCTIONS TO BIDDERS, enquiries should be received no later than five (5) calendar days prior to the date set for solicitation closing to allow sufficient time to provide a response. Enquiries received after that time may not result in an answer being provided.
- 2) To ensure consistency and quality of the information provided to Bidders, the Contracting Officer shall examine the content of the enquiry and shall decide whether or not to issue an amendment.
- 3) All enquiries and other communications related to this bid sent throughout the solicitation period are to be directed ONLY to the Contracting Officer named on the INVITATION TO TENDER - Page 1. Non-compliance with this requirement during the solicitation period can, for that reason alone, result in disqualification of a bid.

SI03 NON-MANDATORY SITE VISIT

- 1) There will be a site visit on Thursday, October, 29 , 2015 at
10: 00 AM PM Local Standard Time.

SPECIAL INSTRUCTIONS TO BIDDERS (Continued)

Interested bidders are to meet at:

Greenhouse and Processing Crops Research Centre
2585 County Road 20
Harrow, ON, NOR 1G0

SI04 REVISION OF BID

- 1) A bid may be revised by letter or facsimile in accordance with GI09 of the GENERAL INSTRUCTIONS TO BIDDERS. The facsimile number for receipt of revisions is 514 283-3143 .

SI05 BID RESULTS

- 1) Following bid closing, bid results may be obtained from the bid receiving office by email at gabriel.leplouffe@agr.gc.ca .

SI06 INSUFFICIENT FUNDING

- 1) In the event that the lowest compliant bid exceeds the amount of funding allocated for the Work, Canada in its sole discretion may:
 - (a) cancel the solicitation; or
 - (b) obtain additional funding and award the Contract to the Bidder submitting the lowest compliant bid; and/or
 - (c) negotiate a reduction in the bid price and/or scope of work of not more than 15% with the Bidder submitting the lowest compliant bid. Should an agreement satisfactory to Canada not be reached, Canada shall exercise option (a) or (b).

SI07 BID VALIDITY PERIOD

- 1) Canada reserves the right to seek an extension to the bid validity period prescribed in Clause 4 of the BID AND ACCEPTANCE Form. Upon notification in writing from Canada, Bidders shall have the option to either accept or reject the proposed extension.
- 2) If the extension referred to in paragraph 1) of SI07 is accepted, in writing, by all those who submitted bids, then Canada shall continue immediately with the evaluation of the bids and its approvals processes.
- 3) If the extension referred to in paragraph 1) of SI07 is not accepted in writing by all those who submitted bids then Canada shall, at its sole discretion, either:
 - (a) continue to evaluate the bids of those who have accepted the proposed extension and seek the necessary approvals; or
 - (b) cancel the invitation to bid.
- 4) The provisions expressed herein do not in any manner limit Canada's rights in law or under GI10 of the GENERAL INSTRUCTIONS TO BIDDERS.

SPECIAL INSTRUCTIONS TO BIDDERS (Continued)

SI08 CONSTRUCTION DOCUMENTS

- 1) The successful contractor will be provided with one paper copy of the sealed and signed plans, the specifications and the amendments upon acceptance of the offer. Additional copies, up to a maximum of three (3), will be provided free of charge upon request by the Contractor. Obtaining more copies shall be the responsibility of the Contractor including costs.

SI09 WEB SITES

The connection to some of the Web sites in the solicitation documents is established by the use of hyperlinks. The following is a list of the addresses of the Web sites:

Treasury Board Appendix L, Acceptable Bonding Companies

<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appL>

Canadian economic sanctions

<http://www.international.gc.ca/sanctions/index.aspx?lang=eng>

SI10 PERSONNEL SECURITY REQUIREMENTS

- 1) The successful Bidder's personnel, as well as any subcontractor and its personnel, who are required to perform any part of the work pursuant to the subsequent contract, must meet the following contract security requirements:
 - Unscreened personnel may be used for the work. Unscreened personnel will require an escort provided by AAFC.



Appendix "C"

BID AND ACCEPTANCE FORM



BID AND ACCEPTANCE FORM

CONSTRUCTION CONTRACT - MAJOR WORKS

BA01 IDENTIFICATION					
Description of the Work To provide Construction Services to modernize two (2), second floor washrooms. All work is described in the plans and specifications to include but not limited to demolition, replacement of plumbing fixtures, electrical lighting, floor and wall finishes, ceilings and upgrades to meet accessibility standards. Project is located at Agriculture and Agri-Food Canada, The Greenhouse and Processing Crops Research Centre, 2585 County Road 20 Harrow, Ontario NOR 1G0.					
Solicitation Number 01B46-15-0034			File / Project Number 1516-144110-P06		
BA02 BUSINESS NAME AND ADDRESS OF BIDDER					
Name					
Address					
Unit/Suite/Apt.	Street number	Number suffix	Street name	Street type	Street direction
PO Box or Route Number			Municipality (City, Town, etc.)	Province	Postal code
Phone number		Fax number		Email address	
BA03 THE OFFER					
1) The Bidder offers to Canada as represented by the Minister of Agriculture and Agri-food Canada to perform and complete the Work for the above named project in accordance with the Bid Documents for the Total Bid Amount of: \$ _____ excluding Applicable Taxes (GST/HST/QST). (to be expressed in numbers only)					
BA04 BID VALIDITY PERIOD					
1) The bid shall not be withdrawn for a period of <u>60</u> days following the date of solicitation closing.					
BA05 APPENDICES					
1) The following appendices are included in this Bid and Acceptance Form: <input checked="" type="checkbox"/> Appendix 2					
BA06 ACCEPTANCE AND CONTRACT					
1) Upon acceptance of the Bidder's offer by Canada, a binding Contract shall be formed between Canada and the resulting Contractor. The documents forming the Contract shall be the contract documents referred to in SC01 CONTRACT DOCUMENTS.					
BA07 CONSTRUCTION TIME					
1) The Contractor shall perform and complete the Work <u>on or before</u> <u>2016-02-22</u>					
BA08 BID SECURITY					
1) The Bidder shall enclose bid security with its bid in accordance with GI07 BID SECURITY REQUIREMENTS.					
2) If a security deposit is furnished as bid security, it shall be forfeited in the event that the bid is accepted by Canada and the Contractor fails to provide Contract Security in accordance with GC9 CONTRACT SECURITY, provided that Canada may, if it is in the public interest, waive the right of Canada to forfeiture any or all of the security deposit.					

BA09 SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (type or print)	Name
	Title

	Signature _____ Date _____
	Name
	Title

	Signature _____ Date _____

BID AND ACCEPTANCE FORM
CONSTRUCTION CONTRACT - MAJOR WORKS
APPENDIX 2

LIST OF SUBCONTRACTORS

The Bidder will subcontract the parts of the work listed below to the subcontractor named for each part. The Bidder agrees not to make changes in the list of subcontractors without the written consent of the Departmental Representative. The Bidder understands that for each part of the work, if more than one subcontractor is named, or no subcontractor is named, or, the Bidder fails to state that the work will be done by its own forces where applicable, the bid will be subject to disqualification.

LIST OF EQUIPMENT

LIST OF MATERIALS



Appendix "D"

MAJOR WORKS - GENERAL CONDITIONS



MAJOR WORKS – GENERAL CONDITIONS

Page 1 of 54

MAJOR WORKS GENERAL CONDITIONS FORM AAFC 5321:

Revision Date

GC1	GENERAL PROVISIONS	Original
GC2	ADMINISTRATION OF THE CONTRACT	Original
GC3	EXECUTION AND CONTROL OF THE WORK	Original
GC4	PROTECTIVE MEASURES	Original
GC5	TERMS OF PAYMENT	Original
GC6	DELAYS AND CHANGES IN THE WORK	Original
GC7	DEFAULT, SUSPENSION OR TERMINATION OF CONTRACT	Original
GC8	DISPUTE RESOLUTION	Original
GC9	CONTRACT SECURITY	Original
GC10	INSURANCE	Original

GC1 GENERAL PROVISIONS

- GC1.1 INTERPRETATION
 - GC1.1.1 Headings and References
 - GC1.1.2 Terminology
 - GC1.1.3 Application of Certain Provisions
 - GC1.1.4 Substantial Performance
 - GC1.1.5 Completion
- GC1.2 CONTRACT DOCUMENTS
 - GC1.2.1 General
 - GC1.2.2 Order of Precedence
 - GC1.2.3 Security and Protection of Documents and Work
- GC1.3 STATUS OF THE CONTRACTOR
- GC1.4 RIGHTS AND REMEDIES
- GC1.5 TIME OF THE ESSENCE
- GC1.6 INDEMNIFICATION BY THE CONTRACTOR
- GC1.7 INDEMNIFICATION BY CANADA
- GC1.8 LAWS, PERMITS AND TAXES
- GC1.9 WORKERS' COMPENSATION
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GC1.1 INTERPRETATION

GC1.1.1 Headings and References

- 1) The headings in the contract documents, other than those in the drawings and specifications, form no part of the Contract but are inserted for convenience of reference only.
- 2) A reference made to a part of the Contract by means of numbers preceded by letters is a reference to the particular part of the Contract that is identified by that combination of letters and numbers and to any other part of the Contract referred to therein.
- 3) A reference to a paragraph or subparagraph followed by an identifying number, letter or combination thereof is, unless specifically stated otherwise, a reference to the paragraph or subparagraph that forms part of the clause within which the reference is made.

GC1.1.2 Terminology

- 1) In the Contract

"Applicable Taxes" means the Goods and Services Tax (GST), the Harmonized Sales Tax (HST), and any provincial tax, by law, payable by Canada such as, the Quebec Sales Tax (QST) as of April 1, 2013;

"Canada", "Crown", "Her Majesty" means Her Majesty the Queen in right of Canada;

"Contract" means the contract documents referred to as such therein and every other document specified or referred to in any of them as forming part of the Contract, all as amended by agreement of the parties;

"Contract Amount" means the amount set out in the Contract to be payable to the Contractor for the Work, subject to the terms and conditions of the Contract, exclusive of Applicable Taxes;

"Contract Security" means any security given by the Contractor to Canada in accordance with the Contract;

"Contractor" means the person contracting with Canada to provide or furnish all labour, Material and Plant for the execution of the Work under the Contract, and includes the Contractor's superintendent as designated in writing to Canada.

"Certificate of Completion" means a certificate issued by Canada when the Work reaches Completion;

"Certificate of Measurement" means a certificate issued by Canada certifying the correctness of the final quantities, prices per unit and values of labour, Plant and Material performed, used and supplied by the Contractor for the construction of the part of the Work to which a Unit Price Arrangement applies;

"Certificate of Substantial Performance" means a certificate issued by Canada when the Work reaches Substantial Performance;

"Departmental Representative" means the person designated in the Contract, or by written notice to the Contractor, to act as the Departmental Representative for the purposes of the Contract, and includes a person, designated and authorized in writing by the Departmental Representative to the Contractor;

"herein", "hereby", "hereof", "hereunder" and similar expressions refer to the Contract as a whole and not to any particular section or part thereof;

"Lump Sum Arrangement" means that part of the Contract that prescribes a lump sum as payment for performance of the Work to which it relates;

"Material" includes all commodities, articles, machinery, equipment, fixtures and things required to be furnished in accordance with the Contract for incorporation into the Work;

"person" also includes, unless there is an express stipulation in the Contract to the contrary, any partnership, proprietorship, firm, joint venture, consortium or corporation;

"Plant" includes all tools, implements, machinery, vehicles, structures, equipment, articles and things that are necessary for the performance of the Contract, other than Material and those tools customarily provided by a tradesperson in practicing a trade;

"Subcontractor" means a person having a direct contract with the Contractor, subject to GC3.6 SUBCONTRACTING, to perform a part or parts of the Work, or to supply Material customized for the Work;

"Superintendent" means the employee or representative of the Contractor designated by the Contractor to act pursuant to GC2.6 SUPERINTENDENT;

"Supplementary Conditions" means the part of the Contract that amends or supplements the General Conditions;

"Supplier" means a person having a direct contract with the Contractor to supply Plant or Material not customized for the Work;

"Total Estimated Cost", "Revised Estimated Cost", "Increase (Decrease)" on Page 1 of the Contract or Contract Amendment means an amount used for internal administrative purposes only that comprises the Contract Amount, or the revised Contract Amount, or the amount that would increase or decrease the Contract Amount and the Applicable Taxes as evaluated by the Contracting Authority, and does not constitute tax advice on the part of Canada;

"Unit Price Arrangement" means that part of the Contract that prescribes the product of a price per unit of measurement multiplied by a number of units of measurement for performance of the Work to which it relates;

"Unit Price Table" means the table of prices per unit set out in the Contract;

"Work" means, subject only to any express stipulation in the Contract to the contrary, everything that is necessary to be done, furnished or delivered by the Contractor to perform the Contract in accordance with the contract documents; and

"Working Day" means a day other than a Saturday, Sunday, or a statutory holiday that is observed by the construction industry in the area of the place of the Work.

GC1.1.3 Application of Certain Provisions

- 1) Any provisions of the Contract that are expressly stipulated to be applicable only to a Unit Price Arrangement are not applicable to any part of the Work to which a Lump Sum Arrangement applies.
- 2) Any provisions of the Contract that are expressly stipulated to be applicable only to a Lump Sum Arrangement are not applicable to any part of the Work to which a Unit Price Arrangement applies.

GC1.1.4 Substantial Performance

- 1) The Work shall be considered to have reached Substantial Performance when
 - (a) the Work or a substantial part thereof has passed inspection and testing and is, in the opinion of Canada, ready for use by Canada or is being used for the intended purposes; and
 - (b) the Work is, in the opinion of Canada, capable of completion or correction at a cost of not more than
 - (i) 3 percent of the first \$500,000;
 - (ii) 2 percent of the next \$500,000; and
 - (iii) 1 percent of the balanceof the Contract Amount at the time this cost is calculated.
- 2) Where the Work or a substantial part thereof is ready for use or is being used for the purposes intended and

- (a) the remainder of the Work or a part thereof cannot be completed by the time specified in the Contract, or as amended in accordance with GC6.5 DELAYS AND EXTENSION OF TIME, for reasons beyond the control of the Contractor; or
- (b) Canada and the Contractor agree not to complete a part of the Work within the specified time;

the cost of that part of the Work that was either beyond the control of the Contractor to complete or Canada and the Contractor have agreed not to complete by the time specified, shall be deducted from the value of the Contract referred to in subparagraph 1)(b) of GC1.1.4 and the said cost shall not form part of the cost of the Work remaining to be done in determining Substantial Performance.

GC1.1.5 Completion

- 1) The Work shall be deemed to have reached Completion when all labour, Plant and Material required have been performed, used or supplied, and the Contractor has complied with the Contract and all orders and directions made pursuant thereto, all to the satisfaction of Canada.

GC1.2 CONTRACT DOCUMENTS

GC1.2.1 General

- 1) The contract documents are complementary, and what is required by any one shall be as binding as if required by all.
- 2) References in the contract documents to the singular shall be considered to include the plural as the context requires.
- 3) Nothing contained in the contract documents shall create a contractual relationship between Canada and any Subcontractor or Supplier, their subcontractors or suppliers, or their agents or employees.

GC1.2.2 Order of Precedence

- 1) In the event of any discrepancy or conflict in the contents of the following documents, such documents shall take precedence and govern in the following order:
 - (a) any amendment or variation of the contract documents that is made in accordance with the General Conditions;
 - (b) any amendment issued prior to tender closing;
 - (c) Supplementary Conditions;
 - (d) General Conditions;
 - (e) the duly completed Bid and Acceptance Form when accepted;
 - (f) drawings and specifications.

later dates shall govern within each of the above categories of documents.

- 2) In the event of any discrepancy or conflict in the information contained in the drawings and specifications, the following rules shall apply:
 - (a) specifications shall govern over drawings;
 - (b) dimensions shown in figures on a drawings shall govern where they differ from dimensions scaled from the same drawings; and
 - (c) drawings of larger scale govern over those of smaller scale.

GC1.2.3 Security and Protection of Documents and Work

- 1) The Contractor shall guard and protect contract documents, drawings, information, models and copies thereof, whether supplied by Canada or the Contractor, against loss or damage from any cause.
- 2) The Contractor shall keep confidential all information provided to the Contractor by or on behalf of Canada in connection with the Work, and all information developed by the Contractor as part of the Work, and shall not disclose any such information to any person without the written permission of Canada, except that the Contractor may disclose to a subcontractor, authorized in accordance with the Contract, information necessary to the performance of a subcontract. This section does not apply to any information that
 - (a) is publicly available from a source other than the Contractor; or
 - (b) is or becomes known to the Contractor from a source other than Canada, except any source that is known to the Contractor to be under an obligation to Canada not to disclose the information.
- 3) When the Contract, the Work, or any information referred to in paragraph 2) is identified as top secret, secret, confidential, or protected by Canada, the Contractor shall, at all times, take all measures reasonably necessary for the safeguarding of the material so identified, including such measures as may be further specified elsewhere in the Contract or provided, in writing, from time to time by Canada.
- 4) Without limiting the generality of paragraphs 2) and 3) of GC1.2.3, when the Contract, the Work, or any information referred to in paragraph 2) is identified as top secret, secret, confidential or protected by Canada, Canada shall be entitled to inspect the Contractor's premises and the premises of its subcontractors or suppliers and any other person at any tier, for security purposes at any time during the term of the Contract, and the Contractor shall comply with, and ensure that any such subcontractors or suppliers comply with all written instructions issued by Canada dealing with the material so identified, including any requirement that employees of the Contractor and its subcontractors and suppliers and any other person at any tier execute and deliver declarations relating to reliability screenings, security clearances and other procedures.
- 5) The Contractor shall safeguard the Work and the Contract, the specifications, drawings and any other information provided by Canada to the Contractor, and shall be liable to Canada for any loss or damage from any causes.

GC1.3 STATUS OF THE CONTRACTOR

- 1) The Contractor is engaged under the Contract as an independent contractor.

- 2) The Contractor, its subcontractors and suppliers and any other person at any tier and their employees are not engaged by the Contract as employees, servants or agents of Canada.
- 3) For the purposes of the contract the Contractor shall be solely responsible for any and all payments and deductions required to be made by law including those required for Canada or Quebec Pension Plans, Employment Insurance, Worker's Compensation, provincial health or insurance plans, and Income Tax.

GC1.4 RIGHTS AND REMEDIES

- 1) Except as expressly provided in the Contract, the duties and obligations imposed by the Contract and the rights and remedies available thereunder shall be in addition to and not a limitation of any duties, obligations, rights, and remedies otherwise imposed or available by law.

GC1.5 TIME OF THE ESSENCE

- 1) Time is of the essence of the Contract.

GC1.6 INDEMNIFICATION BY THE CONTRACTOR

- 1) The Contractor shall pay all royalties and patent fees required for the performance of the Contract and, at the Contractor's expense, shall defend all claims, actions or proceedings against Canada charging or claiming that the Work or any part thereof provided or furnished by the Contractor to Canada infringes any patent, industrial design, copyright trademark, trade secret or other proprietary right enforceable in Canada.
- 2) The Contractor shall indemnify and save Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings by any third party, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by, or attributable to the activities of the Contractor, its subcontractors and suppliers and any other person at any tier, in performing the Work.
- 3) For the purposes of paragraph 2) of GC1.6, "activities" means any act improperly carried out, any omission to carry out an act and any delay in carrying out an act.

GC1.7 INDEMNIFICATION BY CANADA

- 1) Subject to the *Crown Liability and Proceedings Act*, the *Patent Act*, and any other law that affects Canada's rights, powers, privileges or obligations, Canada shall indemnify and save the Contractor harmless from and against all claims, demands, losses, costs, damage, actions, suits or proceedings arising out of the Contractor's activities under the Contract that are directly attributable to
 - (a) a lack of or a defect in Canada's title to the Work site if owned by Canada, whether real or alleged; or
 - (b) an infringement or an alleged infringement by the Contractor of any patent of invention or any other kind of intellectual property occurring while the Contractor was performing any act for the purposes of the Contract employing a model, plan or design or any other thing related to the Work that was supplied by Canada to the Contractor.

GC1.8 LAWS, PERMITS AND TAXES

- 1) The Contractor shall comply with all federal, provincial and municipal laws and regulations applicable to the performance of the Work or any part thereof including, without limitation, all laws concerning health and labour conditions and the protection of the environment, and shall require compliance therewith by all of its subcontractors and suppliers at any tier as if the Work were being performed for an owner other than Canada. The Contractor shall furnish evidence of compliance with such laws and regulations to Canada at such times as Canada may reasonably request.
- 2) Unless stipulated otherwise in the Contract, the Contractor shall obtain and maintain all permits, certificates, licences, registrations and authorizations required for the lawful performance of the Work.
- 3) Prior to the commencement of the Work at the site, the Contractor shall tender to a municipal authority an amount equal to all fees and charges that would be lawfully payable to that municipal authority in respect of building permits as if the Work were being performed for an owner other than Canada.
- 4) Within 10 days of making a tender pursuant to paragraph 3) of GC1.8, the Contractor shall notify Canada of the amount properly tendered and whether or not the municipal authority has accepted that amount.
- 5) If the municipal authority has not accepted the amount tendered, the Contractor shall pay that amount to Canada within 6 days after the time stipulated in paragraph 4) of GC1.8.
- 6) For the purposes of this clause, "municipal authority" means any authority that would have jurisdiction respecting permission to perform the Work if the owner were not Canada.
- 7) Notwithstanding the residency of the Contractor, the Contractor shall pay any applicable tax arising from or related to the performance of the Work under the Contract.
- 8) In accordance with the Statutory Declaration referred to in paragraph 4) of GC5.5 **SUBSTANTIAL PERFORMANCE OF THE WORK**, a Contractor who has neither residence nor place of business in the province or territory in which work under the Contract is being performed shall provide Canada with proof of registration with the provincial sales tax authorities in the said province.
- 9) For the purpose of the payment of any Applicable Taxes or the furnishing of security for the payment of any Applicable Taxes arising from or related to the performance of the Work, and notwithstanding the provision that all Material, Plant and interest of the Contractor in all real property, licences, powers and privileges, become the property of Canada after the time of purchase in accordance with GC3.10 **MATERIAL PLANT AND REAL PROPERTY BECOME PROPERTY OF CANADA**, the Contractor shall be liable, as a user or consumer, for the payment or for the furnishing of security for the payment of any Applicable Taxes payable, at the time of the use or consumption of that Material, Plant or interest of the Contractor in accordance with the relevant legislation.
- 10) Federal government departments and agencies are required to pay Applicable Taxes.
- 11) Applicable Taxes will be paid by Canada as provided in the request for payment. It is the sole responsibility of the Contractor to charge Applicable Taxes at the correct rate in accordance with applicable legislation. The Contractor agrees to remit to appropriate tax authorities any amounts of Applicable Taxes paid or due.

- 12) The Contractor is not entitled to use Canada's exemptions from any tax, such as provincial sales taxes, unless otherwise specified by law. The Contractor must pay applicable provincial sales tax, ancillary taxes, and any commodity tax, on taxable goods or services used or consumed in the performance of the Contract (in accordance with applicable legislation), including for material incorporated into real property.
- 13) In those cases where Applicable Taxes, customs duties, and excise taxes are included in the Contract Amount, the Contract Amount will be adjusted to reflect any increase, or decrease, of Applicable Taxes, customs duties, and excise taxes that will have occurred between bid submission and contract award. However, there will be no adjustment for any change to increase the Contract Amount if public notice of the change was given before bid submission date in sufficient detail to have permitted the Contractor to calculate the effect of the change.
- 14) Tax Withholding of 15 Percent – Canada Revenue Agency

Pursuant to the *Income Tax Act*, 1985, c. 1 (5th Supp.) and the *Income Tax Regulations*, Canada must withhold 15 percent of the amount to be paid to the Contractor in respect of services provided in Canada if the Contractor is not a resident of Canada, unless the Contractor obtains a valid waiver from the Canada Revenue Agency. The amount withheld will be held on account for the Contractor in respect to any tax liability which may be owed to Canada.

GC1.9 WORKERS' COMPENSATION

- 1) Prior to commencement of Work, at the time of Substantial Performance of the Work, and prior to issuance of the Certificate of Completion, the Contractor shall provide evidence of compliance with workers' compensation legislation applicable to the place of the Work, including payments due thereunder.
- 2) At any time during the term of the Contract, when requested by Canada, the Contractor shall provide such evidence of compliance by the Contractor, its subcontractors and any other person at any tier and any other person performing part of the Work who is required to comply with such legislation.

GC1.10 NATIONAL SECURITY

- 1) If Canada determines that the Work is of a class or kind that involves national security, Canada may order the Contractor to
 - (a) provide Canada with any information concerning persons employed or to be employed by the Contractor for purposes of the Contract; and
 - (b) remove any person from the site of the Work if, in the opinion of Canada, that person may be a risk to the national security;and the Contractor shall comply with the order.
- 2) In all contracts with persons who are to be employed in the performance of the Contract, the Contractor shall make provision for the performance of any obligation that may be imposed upon the Contractor under paragraph 1) of GC1.10.

GC1.11 UNSUITABLE WORKERS

- 1) Canada shall instruct the Contractor to remove from the site of the Work any person employed by the Contractor for purposes of the Contract who, in the opinion of Canada, is incompetent or is guilty of improper conduct, and the Contractor shall not permit a person who has been removed to return to the site of the Work.

GC1.12 PUBLIC CEREMONIES AND SIGNS

- 1) The Contractor shall not permit any public ceremony in connection with the Work without the prior consent of Canada.
- 2) The Contractor shall not erect nor permit the erection of any sign or advertising on the Work or its site without the prior consent of Canada.

GC1.13 CONFLICT OF INTEREST

- 1) It is a term of the Contract that no individual, for whom the post-employment provisions of the Conflict of Interest and Post-Employment Code for Public Office Holders or the Values and Ethics Code for the Public Service apply, shall derive a direct benefit from the Contract unless that individual is in compliance with the applicable post-employment provisions.

GC1.14 AGREEMENTS AND AMENDMENTS

- 1) The Contract constitutes the entire and sole agreement between the parties with respect to the subject matter of the Contract and supersedes all previous negotiations, communications and other agreements, whether written or oral, relating to it, unless they are incorporated by reference in the Contract. There are no terms, covenants, representations, statements or conditions binding on the parties other than those contained in the Contract.
- 2) The failure of either party at any time to require performance by the other party of any provision hereof shall not affect the right thereafter to enforce such provision. Nor shall the waiver by either party of any breach of any covenant, term or condition hereof be taken to be held to be a waiver of any further breach of the same covenant, term or condition.
- 3) The Contract may be amended only as provided for in the Contract.

GC1.15 SUCCESSION

- 1) The Contract shall inure to the benefit of and be binding upon the parties hereto and their lawful heirs, executors, administrators, successors and, subject to GC1.16 ASSIGNMENT, permitted assigns.

GC1.16 ASSIGNMENT

- 1) The Contractor shall not make any assignment of the Contract, either in whole or in part, without the written consent of Canada.

GC1.17 NO BRIBE

- 1) The Contractor represents and covenants that no bribe, gift, benefit, nor other inducement has been nor shall be paid, given, promised or offered directly or indirectly to any official or employee of Canada or to a member of the family of such a person, with a view to influencing the entry into the Contract or the administration of the Contract.

GC1.18 CERTIFICATION - CONTINGENCY FEES

- 1) In this clause
 - (a) "contingency fee" means any payment or other compensation that is contingent upon or is calculated upon the basis of a degree of success in soliciting or obtaining a Government contract or negotiating the whole or any part of its terms;
 - (b) "employee" means a person with whom the Contractor has an employer/employee relationship; and
 - (c) "person" includes an individual or a group of individuals, a corporation, a partnership, an organization and an association and, without restricting the generality of the foregoing, includes any individual who is required to file a return with the registrar pursuant to section 5 of the *Lobbying Act* R.S.C. 1985 c.44 (4th Supplement) as the same may be amended from time to time.
- 2) The Contractor certifies that it has not directly or indirectly paid nor agreed to pay and covenants that it shall not directly or indirectly pay nor agree to pay a contingency fee for the solicitation, negotiation or obtaining of the Contract to any person other than an employee acting in the normal course of the employee's duties.
- 3) All accounts and records pertaining to payments of fees or other compensation for the solicitation, obtaining or negotiation of the Contract shall be subject to the accounts and audit provisions of the Contract.
- 4) If the Contractor certifies falsely under this section or is in default of the obligations contained therein, Canada may either take the Work out of the Contractor's hands in accordance with the provisions of the Contract or recover from the Contractor by way of reduction to the Contract Amount or otherwise, the full amount of the contingency fee.

GC1.19 INTERNATIONAL SANCTIONS

- 1) Persons and companies in Canada, and Canadians outside of Canada are bound by economic sanctions imposed by Canada. As a result, the Government of Canada cannot accept delivery of goods or services that originate, either directly or indirectly, from the countries or persons subject to economic sanctions
- 2) It is a condition of the Contract that the Contractor not supply to the Government of Canada any goods or services which are subject to economic sanctions.
- 3) By law, the Contractor must comply with changes to the regulations imposed during the life of the Contract. During the performance of the Contract should the imposition of sanctions against a country or person or the addition of a good or service to the list of sanctioned goods or services cause an impossibility of performance for the Contractor, the Contractor may request that the Contract be terminated in accordance with GC7.3 TERMINATION OF CONTRACT.

GC2 ADMINISTRATION OF THE CONTRACT

- GC2.1 DEPARTMENTAL REPRESENTATIVE'S AUTHORITY
- GC2.2 INTERPRETATION OF CONTRACT
- GC2.3 NOTICES
- GC2.4 SITE MEETINGS
- GC2.5 REVIEW AND INSPECTION OF WORK
- GC2.6 SUPERINTENDENT
- GC2.7 NON-DISCRIMINATION IN HIRING AND EMPLOYMENT OF LABOUR
- GC2.8 ACCOUNTS AND AUDITS

GC2.1 DEPARTMENTAL REPRESENTATIVE'S AUTHORITY

- 1) Canada shall designate a Departmental Representative and shall notify the Contractor of the name, address and telephone number of the Departmental Representative.
- 2) The Departmental Representative shall perform Canada's duties and functions under the contract.
- 3) The Departmental Representative shall be authorized to issue notices, instructions and directions to the Contractor and to accept on behalf of Canada any notice, order or other communication from the contractor relating to the Work.
- 4) The Departmental Representative shall, within a reasonable time, review and respond to submissions made by the Contractor in accordance with the requirements of the Contract.

GC2.2 INTERPRETATION OF CONTRACT

- 1) If, at any time before Canada has issued a Certificate of Completion, any question arises between the parties about whether anything has been done as required by the Contract or about what the Contractor is required by the Contract to do, and in particular but without limiting the generality of the foregoing, about
 - (a) the meaning of anything in the drawings and specifications;
 - (b) the meaning to be given to the drawings and specifications in case of any error therein, omission therefrom, or obscurity or discrepancy in their wording or intention;
 - (c) whether or not the quality or quantity of any Material or workmanship supplied or proposed to be supplied by the Contractor meets the requirements of the Contract;
 - (d) whether or not the labour, Plant or Material performed, used and supplied by the Contractor for performing the Work and carrying out the Contract are adequate to ensure that the Work shall be performed in accordance with the Contract and that the Contract shall be carried out in accordance with its terms;
 - (e) what quantity of any of the Work has been completed by the Contractor; or
 - (f) the timing and scheduling of the various phases of the performance of the Work as specified in the Contract;

the question shall be decided, subject to the provisions of GC8 DISPUTE RESOLUTION, by Canada.

- 2) The Contractor shall perform the Work in accordance with any decisions of Canada that are made under paragraph 1) of GC2.2 and in accordance with any consequential directions given by Canada.
- 3) If the Contractor fails to comply with any instruction or direction issued by Canada pursuant to the Contract, Canada may employ such methods as Canada deems advisable to do what the Contractor failed to do, and the Contractor shall, on demand, pay Canada an amount that is equal to the aggregate of all costs, expenses and damages incurred or sustained by Canada by reason of the Contractor's failure to comply with such instruction or direction, including the cost of any methods employed by Canada in doing what the Contractor failed to do.

GC2.3 NOTICES

- 1) Subject to paragraph 3) of GC2.3, any notice, order or other communication may be given in any manner, and if required to be in writing, shall be addressed to the party to whom it is intended at the address in the Contract or at the last address of which the sender has received written notice in accordance with this section.
- 2) Any notice, order or other communication given in writing in accordance with paragraph 1) of GC2.3 shall be deemed to have been received by either party
 - (a) if delivered personally, on the day that it was delivered;
 - (b) if forwarded by mail, on the earlier of the day it was received or the sixth day after it was mailed; and
 - (c) if forwarded by facsimile or electronic mail, 24 hours after it was transmitted.
- 3) A notice given under GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS, GC7.2 SUSPENSION OF WORK, and GC7.3 TERMINATION OF CONTRACT shall be given in writing and, if delivered personally, shall be delivered, if the Contractor is a sole proprietor, to the Contractor or, if the Contractor is a partnership or corporation, to an officer thereof.

GC2.4 SITE MEETINGS

- 1) In consultation with Canada, the Contractor shall arrange site meetings at regular intervals, with all involved parties who are to attend, in order to ensure, among other things, the proper co-ordination of the Work.

GC2.5 REVIEW AND INSPECTION OF WORK

- 1) Canada shall review the Work to determine if it is proceeding in conformity with the Contract and to record the necessary data to make an assessment of the value of Work completed. Canada shall measure and record the quantities of labour, Plant and Material performed, used or supplied by the Contractor in performing the Work or any part thereof that is subject to a Unit Price Arrangement and, on request, shall inform the Contractor of those measurements, and permit the Contractor to inspect any records pertaining thereto.
- 2) Canada shall reject Work or Material which in Canada's opinion does not conform to the requirements of the Contract, and shall require inspection or testing of Work, whether or not such Work is fabricated, installed, or completed. If such Work is not in accordance with the

requirements of the Contract, the Contractor shall correct the Work and shall pay Canada, on demand, all reasonable costs and expenses that were incurred by Canada in having the examination performed.

- 3) The Contractor shall provide Canada with access to the Work and its site at all times, and at all times shall provide sufficient, safe, and proper facilities for the review and inspection of the Work by persons authorized by Canada and any representatives of those authorities having jurisdiction. If parts of the Work are in preparation at locations other than the site of the Work, Canada shall be given access to such Work whenever it is in progress.
- 4) The Contractor shall furnish Canada with such information respecting the performance of the Contract as Canada may require, and render every possible assistance to enable Canada to verify that the Work is performed in accordance with the Contract, carry out any other duties and exercise any powers in accordance with the Contract.
- 5) If Work is designated for tests, inspections, or approvals in the Contract or by Canada's instructions, or by laws or ordinances of the place of the Work, the Contractor shall give Canada reasonable notice of when such Work shall be ready for review and inspection. The Contractor shall arrange for and shall give Canada reasonable notice of the date and time of inspections, tests or approvals.
- 6) If the Contractor covers, or permits to be covered, Work that has been designated for tests, inspections or approvals before such tests, inspections or approvals are made, completed or given, the Contractor shall, if so directed by Canada, uncover such Work, have the inspections, tests or approvals satisfactorily made, completed or given and make good the covering of the Work at the Contractor's expense.

GC2.6 SUPERINTENDENT

- 1) Prior to commencing the Work, the Contractor shall designate a Superintendent and shall notify Canada of the name, address and telephone number of the Superintendent. The Contractor shall keep the Superintendent at the Work site during working hours until the Work has reached completion.
- 2) The Superintendent shall be in full charge of the operations of the Contractor during the performance of the Work and shall be authorized to accept on behalf of the Contractor any notice, order or other communication given to the Superintendent or the Contractor relating to the Work.
- 3) Upon request of Canada, the Contractor shall remove any Superintendent who, in the opinion of Canada, is incompetent or has been guilty of improper conduct, and shall forthwith designate another Superintendent who is acceptable to Canada.
- 4) The Contractor shall not substitute a Superintendent without the written consent of Canada. If a Superintendent is substituted without such consent, Canada shall be entitled to refuse to issue any documentation or certification relating to progress payments, Substantial Performance or Completion of the Work until the Superintendent has returned to the Work site or another Superintendent who is acceptable to Canada has been substituted.

GC2.7 NON-DISCRIMINATION IN HIRING AND EMPLOYMENT OF LABOUR

- 1) For the purposes of this clause, "persons" include the Contractor, its subcontractors and suppliers at any tier and their respective employees, agents, licensees or invitees and any other individual involved in the performance of the Work or granted access to the Work site.

A "person" includes any partnership, proprietorship, firm, joint venture, consortium and corporation.

- 2) Without restricting the provisions of paragraph 3) of GC2.6, SUPERINTENDENT, the Contractor shall not refuse to employ and shall not discriminate in any manner against any person because
 - (a) of that person's race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status;
 - (b) of the race, national or ethnic origin, colour, religion, age, sex, sexual orientation, marital status, disability, conviction for which a pardon has been granted, or family status of any person having a relationship or association with that person, or
 - (c) a complaint has been made or information has been given in respect of that person relating to an alleged failure by the Contractor to comply with subparagraph (a) or (b).
- 3) Within two working days immediately following receipt of a written complaint pursuant to paragraph 2) of GC2.7, the Contractor shall
 - (a) cause to have issued a written direction to the person or persons named by the complainant to cease all actions that form the basis of the complaint;
 - (b) forward a copy of the complaint to Canada by registered mail or courier service; and
 - (c) when the Labour Conditions are applicable under the circumstances of the complaint, forward a copy of the complaint to HRSDC - Labour to the attention of the appropriate Director as described in the Labour Conditions ("HRSDC - Labour" means the labour component of the federal Department of Human Resources and Social Development).
- 4) Within twenty four (24) hours immediately following receipt of a direction from Canada to do so, the Contractor shall cause to have removed from the site of the Work and from the performance of Work under the Contract, any person or persons whom Canada believes to be in breach of the provisions of paragraph 2) of GC2.7.
- 5) No later than thirty (30) days after receipt of the direction referred to in paragraph 4) of GC2.7, the Contractor shall cause the necessary action to be commenced to remedy the breach described in the direction.
- 6) If a direction is issued pursuant to paragraph 4) of GC2.7, Canada may withhold from monies that are due and payable to the Contractor or setoff pursuant to GC5.9 RIGHT OF SETOFF, whichever is applicable, an amount representing the sum of the costs and payment referred to in paragraph 8) of GC2.7.
- 7) If the Contractor fails to proceed in accordance with paragraph 5) of GC2.7, Canada shall take the necessary action to have the breach remedied, and shall determine all supplementary costs incurred by Canada as a result.
- 8) Canada may make a payment directly to the complainant from monies that are due and payable to the Contractor upon receipt from the complainant of
 - (a) a written award issued pursuant to the federal *Commercial Arbitration Act*, R.S.C. 1985, c. 17 (2nd Supp.);

- (b) a written award issued pursuant to the Canadian Human Rights Act, R.S.C. 1985, c. H-6;
 - (c) a written award issued pursuant to provincial or territorial human rights legislation; or
 - (d) a judgement issued by a court of competent jurisdiction.
- 9) If Canada is of the opinion that the Contractor has breached any of the provisions of this clause, Canada may take the Work out of the Contractor's hands pursuant to GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS.
- 10) Subject to paragraph 7) of GC3.6 SUBCONTRACTING, the Contractor shall ensure that the provisions of this clause are included in all agreements and contracts entered into as a consequence of the Work.

GC2.8 ACCOUNTS AND AUDITS

- 1) The Contractor shall, in addition to the requirements expressed in paragraph 6) of GC3.4 EXECUTION OF THE WORK, maintain full records of the Contractor's estimated and actual cost of the Work together with all tender calls, quotations, contracts, correspondence, invoices, receipts and vouchers relating thereto, and shall make them available on request to audit and inspection by Canada and the Deputy Receiver General for Canada or by persons designated to act on behalf of either or both of them.
- 2) The Contractor shall allow any of the persons referred to in paragraph 1) of GC2.8 to make copies of and take extracts from any of the records and material, and shall furnish such persons or entities with any information those persons or entities may require from time to time in connection with such records and material.
- 3) The Contractor shall maintain and keep the records intact until the expiration of two years after the date that a Certificate of Completion has been issued or until the expiration of such other period of time as Canada may direct.
- 4) The Contractor shall cause all subcontractors at any tier and all other persons directly or indirectly controlled by or affiliated with the Contractor and all persons directly or indirectly having control of the Contractor to comply with the requirements of this clause as if they were the Contractor.

GC3 EXECUTION AND CONTROL OF THE WORK

- GC3.1 PROGRESS SCHEDULE
- GC3.2 ERRORS AND OMISSIONS
- GC3.3 CONSTRUCTION SAFETY
- GC3.4 EXECUTION OF THE WORK
- GC3.5 MATERIAL
- GC3.6 SUBCONTRACTING
- GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS
- GC3.8 LABOUR
- GC3.9 TRUCK HAULAGE RATES (CANCELLED)
- GC3.10 MATERIAL, PLANT AND REAL PROPERTY BECOME PROPERTY OF CANADA
- GC3.11 DEFECTIVE WORK
- GC3.12 CLEANUP OF SITE
- GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK

GC3.1 PROGRESS SCHEDULE

- 1) The Contractor shall
 - (a) prepare and submit to Canada, prior to the submission of the Contractor's first progress claim, a progress schedule in accordance with the requirements set out in the Contract;
 - (b) monitor the progress of the Work relative to the schedule and update the schedule as stipulated by the contract documents;
 - (c) advise Canada of any revisions to the schedule required as the result of any extension of time for completion of the Contract that was approved by Canada; and
 - (d) prepare and submit to Canada, at the time of issuance of a Certificate of Substantial Performance, an update of any schedule clearly showing a detailed timetable that is acceptable to Canada for the completion of any unfinished Work and the correction of all listed defects.

GC3.2 ERRORS AND OMISSIONS

- 1) The Contractor shall report promptly to Canada any errors, discrepancies, or omissions the Contractor may discover when reviewing the contract documents. In making a review, the Contractor does not assume any responsibility to Canada for the accuracy of the review. The Contractor shall not be liable for damage or costs resulting from such errors, discrepancies, or omissions in the contract documents prepared by or on behalf of Canada that the Contractor did not discover.

GC3.3 CONSTRUCTION SAFETY

- 1) Subject to GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS, the Contractor shall be solely responsible for construction safety at the place of the Work and for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Work. In any emergency, the Contractor shall either stop the Work, make changes or order extra work to ensure the safety of life and the protection of the Work and neighbouring property.

- 2) Prior to commencing the Work, the Contractor shall notify the authorities having jurisdiction for construction safety at the site of the Work with respect to the intended commencement of the Work, and shall provide such authority with whatever additional information may be required by that authority.

GC3.4 EXECUTION OF THE WORK

- 1) The Contractor shall perform, use or supply and pay for, all labour, Plant, Material, tools, construction machinery and equipment, water, heat, light, power, transportation and other facilities and services necessary for the performance of the Work in accordance with the Contract.
- 2) The Contractor shall, at all times, perform the Work in a proper, diligent and expeditious manner as is consistent with construction industry standards and in accordance with the progress schedule prepared pursuant to GC3.1 PROGRESS SCHEDULE and shall provide sufficient personnel to fulfil the Contractor's obligations in accordance with that schedule.
- 3) Subject to paragraph 4) of GC3.4, the Contractor shall have complete care, custody and control of the Work and shall direct and supervise the Work so as to ensure compliance with the Contract. The Contractor shall be responsible for construction means, methods, techniques, sequences and procedures and for co-ordinating the various parts of the Work.
- 4) When requested in writing by Canada, the Contractor shall make appropriate alterations in the method, Plant or workforce at any time Canada considers the Contractor's actions to be unsafe or damaging to either the Work, existing facilities, persons at the site of the Work or the environment.
- 5) The Contractor shall have sole responsibility for the design, erection, operation, maintenance and removal of temporary structures and other temporary facilities and for the construction methods used in their erection, operation, maintenance and removal. The Contractor shall engage and pay for registered professional engineering personnel, skilled in the appropriate discipline to perform these functions if required by law or by the Contract, and in all cases when such temporary facilities and their methods of construction are of such a nature that professional engineering skill is required to produce safe and satisfactory results.
- 6) The Contractor shall keep at least one copy of current contract documents, submittals, reports, and records of meetings at the site of the Work, in good order and available to Canada.
- 7) Except for any part of the Work that is necessarily performed away from or off the site of the Work, the Contractor shall confine Plant, storage of Material, and operations of employees to limits indicated by laws, ordinances, permits or the contract documents.

GC3.5 MATERIAL

- 1) Unless otherwise specified in the Contract, all Material incorporated in the Work shall be new.
- 2) Subject to paragraph 3) of GC3.5, if a specified reused, refurbished, or recycled item of Material is not available, the Contractor shall apply to Canada to substitute a similar item for the one specified.
- 3) If Canada agrees that the Contractor's application for substitution of a reused, refurbished or recycled item is warranted, and that the substitute item is of acceptable quality and value to

that specified and is suitable for the intended purpose, Canada may approve the substitution, subject to the following:

- (a) the request for substitution shall be made in writing to Canada and shall be substantiated by information in the form of the manufacturer's literature, samples and other data that may be required by Canada;
- (b) the Contractor shall make the request for substitution in a manner that shall not negatively affect the progress schedule of the Contract and well in advance of the time the item of Material must be ordered;
- (c) substitution of Material shall be permitted only with the prior written approval of Canada, and any substituted items that are supplied or installed without such approval shall be removed from the site of the Work at the expense of the Contractor, and specified items installed at no additional cost to Canada; and
- (d) the Contractor shall be responsible for all additional expenses incurred by Canada, the Contractor, its subcontractors and suppliers at any tier due to the Contractor's use of the substitute.

GC3.6 SUBCONTRACTING

- 1) Subject to the provisions of this clause, the Contractor may subcontract any part of the Work but not the whole of the Work.
- 2) The Contractor shall notify Canada in writing of the Contractor's intention to subcontract.
- 3) A notification referred to in paragraph 2) of GC3.6 shall identify the part of the Work and the Subcontractor with whom the Contractor intends to subcontract.
- 4) Canada may for reasonable cause, object to the intended subcontracting by notifying the Contractor in writing within six (6) days of receipt by Canada of a notification referred to in paragraph 2) of GC3.6.
- 5) If Canada objects to a subcontracting, the Contractor shall not enter into the intended subcontract.
- 6) The Contractor shall not change, nor permit to be changed, a Subcontractor engaged by the Contractor, in accordance with this clause, without the written consent of Canada.
- 7) The Contractor shall ensure that all the terms and conditions of the Contract that are of general application shall be incorporated in every other contract issued as a consequence of the Contract, at whatever tier, except those contracts issued solely to suppliers at any tier for the supply of Plant or Material.
- 8) Neither a subcontracting nor Canada's consent to a subcontracting shall be construed to relieve the Contractor from any obligation under the Contract or to impose any liability upon Canada.

GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS

- 1) Canada reserves the right to send other contractors or workers, with or without Plant and Material, onto the site of the Work.

- 2) When other contractors or workers are sent on to the site of the Work, Canada shall
 - (a) enter into separate contracts, to the extent it is possible, with the other contractors under conditions of contract that are compatible with the conditions of the Contract;
 - (b) ensure that the insurance coverage provided by the other contractors is co-ordinated with the insurance coverage of the Contractor as it affects the Work; and
 - (c) take all reasonable precautions to avoid labour disputes or other disputes arising from the work of the other contractors or workers.
- 3) When other contractors or workers are sent on to the site of the Work, the Contractor shall
 - (a) co-operate with them in the carrying out of their duties and obligations;
 - (b) co-ordinate and schedule the Work with the work of the other contractors and workers;
 - (c) participate with other contractors and workers in reviewing their construction schedules when directed to do so;
 - (d) where part of the Work is affected by or depends upon the work of other contractors or workers for its proper execution, promptly report to Canada in writing and prior to proceeding with that part of the Work, any apparent deficiencies in such work. Failure by the Contractor to so report shall invalidate any claims against Canada by reason of the deficiencies in the work of other contractors or workers except those deficiencies that are not then reasonably discoverable; and
 - (e) when designated as being responsible for construction safety at the place of work in accordance with the applicable provincial or territorial laws, carry out its duties in that role and in accordance with those laws.
- 4) If, when entering into the Contract, the Contractor could not have reasonably foreseen nor anticipated the sending of other contractors or workers on to the site of the Work and provided the Contractor
 - (a) incurs extra expense in complying with the requirements of paragraph 3) of GC3.7; and
 - (b) gives Canada written notice of a claim for that extra expense within thirty (30) days of the date that the other contractors or workers were sent onto the Work or its site;

Canada shall pay the Contractor the cost of the extra labour, Plant and Material that was necessarily incurred, calculated in accordance with GC6.4 DETERMINATION OF PRICE.

GC3.8 LABOUR

- 1) To the extent to which they are available, consistent with proper economy and the expeditious carrying out of the Work, the Contractor shall, in the performance of the Work, employ a reasonable number of persons who have been on active service with the Armed Forces of Canada and have been honourably discharged therefrom.

- 2) The Contractor shall maintain good order and discipline among the Contractor's employees and workers engaged in the Work and shall not employ on the site of the Work anyone not skilled in the tasks assigned.

GC3.9 TRUCK HAULAGE RATES

CANCELLED

GC3.10 MATERIAL, PLANT AND REAL PROPERTY BECOME PROPERTY OF CANADA

- 1) Subject to paragraph 9) of GC1.8 LAWS PERMITS AND TAXES, all Material and Plant and the interest of the Contractor in all real property, licences, powers and privileges purchased, used or consumed by the Contractor for the Work shall, immediately after the time of their purchase, use or consumption be the property of Canada for the purposes of the Work and they shall continue to be the property of Canada
 - (a) in the case of Material, until Canada indicates that the Materials shall not be required for the Work; and
 - (b) in the case of Plant, real property, licences, powers and privileges, until Canada indicates that the interest vested in Canada therein is no longer required for the purposes of the Work.
- 2) Material or Plant, that is the property of Canada by virtue of paragraph 1) of GC3.10, shall not be taken away from the site of the Work nor used nor disposed of except for the purposes of the Work without the written consent of Canada.
- 3) Canada is not liable for loss of nor damage from any cause to the Material or Plant referred to in paragraph 1) of GC3.10, and the Contractor is liable for such loss or damage notwithstanding that the Material or Plant is the property of Canada.

GC3.11 DEFECTIVE WORK

- 1) The Contractor shall promptly remove from the site of the Work and replace or re-execute defective Work whether or not the defective Work has been incorporated in the Work and whether or not the defect is the result of poor workmanship, use of defective Material, or damage through carelessness or other act or omission of the Contractor.
- 2) The Contractor, at the Contractor's expense, shall promptly make good other work destroyed or damaged by such removals or replacements.
- 3) If, in the opinion of Canada, it is not expedient to correct defective Work or Work not performed as provided for in the Contract documents, Canada may deduct from the amount otherwise due to the Contractor the difference in value between the Work as performed and that called for by the contract documents.
- 4) The failure of Canada to reject any defective Work or Material shall not constitute acceptance of the defective Work or Material.

GC3.12 CLEANUP OF SITE

- 1) The Contractor shall maintain the Work and its site in a tidy condition and free from an accumulation of waste material and debris.
- 2) Before the issue of a Certificate of Substantial Performance, the Contractor shall remove waste material and debris, and all Plant and Material not required for the performance of the remaining Work and, unless otherwise stipulated in the Contract Documents, shall cause the Work and its site to be clean and suitable for occupancy by Canada.
- 3) Before the issue of a Certificate of Completion, the Contractor shall remove all surplus Plant and Materials and any waste products and debris from the site of the Work.
- 4) The Contractor's obligations described in paragraphs 1) to 3) of GC3.12 do not extend to waste products and other debris caused by Canada's servants, or by other contractors and workers referred to in GC3.7 CONSTRUCTION BY OTHER CONTRACTORS OR WORKERS.

GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK

- 1) Without restricting any warranty or guarantee implied or imposed by law or contained in the Contract, the Contractor shall, at the Contractor's expense
 - (a) rectify and make good any defect or fault that appears in the Work or comes to the attention of Canada with respect to those parts of the Work accepted in connection with the Certificate of Substantial Performance within 12 months from the date of Substantial Performance; and
 - (b) rectify and make good any defect or fault that appears in or comes to the attention of Canada in connection with those parts of the Work described in the Certificate of Substantial Performance within 12 months from the date of the Certificate of Completion.
 - (c) transfer and assign, to Canada, any subcontractor, manufacturer or supplier extended warranties or guarantees implied or imposed by law or contained in the Contract covering periods beyond the 12 months stipulated above. Extended warranties or guarantees referred to herein shall not extend the 12-month period whereby the Contractor, except as may be provided elsewhere in the Contract, must rectify and make good any defect or fault that appears in the Work or comes to the attention of Canada.
 - (d) provide, to Canada prior to the issuance of the Certificate of Completion, a list of all extended warranties and guarantees referred to in paragraph (c) above.
- 2) Canada may direct the Contractor to rectify and make good any defect or fault referred to in paragraph 1) of GC3.13 or covered by any other expressed or implied warranty or guarantee and the Contractor shall rectify and make good such defect within the time stipulated in the direction.
- 3) A direction referred to in paragraph 2) GC3.13 shall be in writing and shall be given to the Contractor in accordance with GC2.3 NOTICES.

GC4 PROTECTIVE MEASURES

GC4.1 PROTECTION OF WORK AND PROPERTY

GC4.2 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE AND OTHER HAZARDS

GC4.3 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY CANADA

GC4.4 CONTAMINATED SITE CONDITIONS

GC4.1 PROTECTION OF WORK AND PROPERTY

- 1) The Contractor shall protect the Work and its site against loss or damage from any cause and shall similarly protect all Material, Plant and real property under the Contractor's care, custody and control whether or not such Material, Plant and real property are supplied by Canada to the Contractor.
- 2) The Contractor shall provide all facilities necessary for the purpose of maintaining security, and shall assist any person authorized by Canada to inspect or to take security measures in respect of the Work and its site.
- 3) Canada may direct the Contractor to do such things and to perform such work as Canada considers reasonable and necessary to ensure compliance with or to remedy a breach of paragraphs 1) or 2) of GC4.1, and the Contractor, shall comply with such direction.

GC4.2 PRECAUTIONS AGAINST DAMAGE, INFRINGEMENT OF RIGHTS, FIRE AND OTHER HAZARDS

- 1) The Contractor shall do whatever is necessary to ensure that
 - (a) no person, property, right, easement nor privilege is injured, damaged or infringed upon by reasons of the Contractor's activities in performing the Work;
 - (b) pedestrian and other traffic on any public or private road or waterway is not unduly impeded, interrupted nor endangered by the performance or existence of the Work, Material or Plant;
 - (c) fire hazards in or about the site of the Work are eliminated and any fire is promptly extinguished;
 - (d) the health and safety of all persons employed in the performance of the Work is not endangered by the methods nor means of their performance;
 - (e) adequate medical services are available to all persons employed on the Work or its site at all times during the performance of the Work;
 - (f) adequate sanitation measures are taken in respect of the Work and its site; and
 - (g) all stakes, buoys and marks placed on the Work or its site by Canada are protected and are not removed, defaced, altered nor destroyed.
- 2) Canada may direct the Contractor to do such things and to perform such work as Canada considers reasonable and necessary to ensure compliance with or to remedy a breach of paragraph 1) of GC4.2, and the Contractor shall comply with the direction of Canada.

GC4.3 MATERIAL, PLANT AND REAL PROPERTY SUPPLIED BY CANADA

- 1) Subject to paragraph 2) of GC4.3, the Contractor is liable to Canada for any loss of or damage to Material, Plant or real property that is supplied or placed in the care, custody and control of the Contractor by Canada for use in connection with the Contract, whether or not that loss or damage is attributable to causes beyond the Contractor's control.
- 2) The Contractor is not liable to Canada for any loss or damage to Material, Plant or real property referred to in paragraph 1) of GC4.3 if that loss or damage results from and is directly attributable to reasonable wear and tear.
- 3) The Contractor shall not use any Material, Plant or real property supplied by Canada except for the purpose of performing the Contract.
- 4) When the Contractor fails to make good any loss or damage for which the Contractor is liable under paragraph 1) within a reasonable time, Canada may cause the loss or damage to be made good at the Contractor's expense, and the Contractor shall thereupon be liable to Canada for the cost thereof and shall, on demand, pay to Canada an amount equal to that cost.
- 5) The Contractor shall keep records of all Material, Plant and real property supplied by Canada as Canada requires and shall satisfy Canada, when requested, that such Material, Plant and real property are at the place and in the condition in which they ought to be.

GC4.4 CONTAMINATED SITE CONDITIONS

- 1) For the purposes of GC4.4, a contaminated site condition exists when a solid, liquid, gaseous, thermal or radioactive irritant or contaminant, or other hazardous or toxic substance or material, including moulds and other forms of fungi, is present at the site of the Work to an extent that constitutes a hazard, or potential hazard, to the environment, property, or the health or safety of any person.
- 2) If the Contractor encounters a contaminated site condition of which the Contractor is not aware or about which the Contractor has not been advised, or if the Contractor has reasonable grounds to believe that such a site condition exists at the site of the Work, the Contractor shall
 - (a) take all reasonable steps, including stopping the Work, to ensure that no person suffers injury, sickness or death, and that neither property nor the environment is injured or destroyed as a result of the contaminated site condition;
 - (b) immediately notify Canada of the circumstances in writing; and
 - (c) take all reasonable steps to minimize additional costs that may accrue as a result of any work stoppage.
- 3) Upon receipt of a notification from the Contractor, Canada shall promptly determine whether a contaminated site condition exists, and shall notify the Contractor in writing of any action to be taken, or work to be performed, by the Contractor as a result of Canada's determination.
- 4) If the Contractor's services are required by Canada, the Contractor shall follow the direction of Canada with regard to any excavation, treatment, removal and disposal of any polluting substance or material.

- 5) Canada, at Canada's sole discretion, may enlist the services of experts and specialty contractors to assist in determining the existence of, and the extent and treatment of contaminated site conditions, and the Contractor shall allow them access and co-operate with them in the carrying out of their duties and obligations.
- 6) Except as may be otherwise provided for in the Contract, the provisions of GC6.4 DETERMINATION OF PRICE shall apply to any additional work made necessary because of a contaminated site condition.

GC5 TERMS OF PAYMENT

- GC5.1 INTERPRETATION
- GC5.2 AMOUNT PAYABLE
- GC5.3 INCREASED OR DECREASED COSTS
- GC5.4 PROGRESS PAYMENT
- GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK
- GC5.6 FINAL COMPLETION
- GC5.7 PAYMENT NOT BINDING ON CANADA
- GC5.8 CLAIMS AND OBLIGATIONS
- GC5.9 RIGHT OF SETOFF
- GC5.10 ASSESSMENTS AND DAMAGES FOR LATE COMPLETION
- GC5.11 DELAY IN MAKING PAYMENT
- GC5.12 INTEREST ON SETTLED CLAIMS
- GC5.13 RETURN OF SECURITY DEPOSIT

GC5.1 INTERPRETATION

In these Terms of Payment

- 1) The "payment period" means a period of 30 consecutive days or such other longer period as may be agreed between the Contractor and Canada.
- 2) An amount is "due and payable" when it is due and payable by Canada to the Contractor according to GC5.4 PROGRESS PAYMENT, GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK or GC5.6 FINAL COMPLETION.
- 3) An amount is "overdue" when it remains unpaid on the first day following the day upon which it is due and payable.
- 4) The "date of payment" means the date of the negotiable instrument of an amount due and payable by the Receiver General for Canada.
- 5) The "Bank Rate" means the rate of interest established by the Bank of Canada as the minimum rate at which it makes short term advances to members of the Canadian Payments Association.
- 6) The "Average Bank Rate" means the simple arithmetic mean of the Bank Rate in effect at 4:00 p.m. Eastern Time each day during the calendar month which immediately precedes the calendar month in which payment is made.

GC5.2 AMOUNT PAYABLE

- 1) Subject to any other provisions of the Contract, Canada shall pay the Contractor, at the times and in the manner hereinafter set out, the amount by which the amounts payable by Canada to the Contractor in accordance with the Contract exceed the amounts payable by the Contractor to Canada, and the Contractor shall accept that amount as payment in full satisfaction for everything furnished and done by the Contractor in respect of the Work to which the payment relates.
- 2) When making any payment to the Contractor, the failure of Canada to deduct an amount payable to Canada by the Contractor shall not constitute a waiver of the right to do so, or an admission of lack of entitlement to do so in any subsequent payment to the Contractor.

- 3) Should any payment be made by Canada in excess of what is owed to the Contractor for the actual work performed, the Contractor will reimburse Canada the excess immediately, with or without demand, and any amounts outstanding shall bear simple interest at the Average Bank rate plus 3 percent per annum from the date of overpayment until the day prior to the date of repayment by the Contractor.
- 4) No payment other than a payment that is expressly stipulated in the Contract shall be made by Canada to the Contractor for any extra expense or any loss or damage incurred or sustained by the Contractor.

GC5.3 INCREASED OR DECREASED COSTS

- 1) The Contract Amount shall not be increased nor decreased by reason of any increase or decrease in the cost of the Work that is brought about by an increase or decrease in the cost of labour, Plant, Material or any wage adjustment arising pursuant to the Labour Conditions.
- 2) Notwithstanding paragraph 1) of GC5.3, if any change, including a new imposition or repeal, of any tax, customs or other duty, charge, or any similar imposition that is imposed under sales, customs or excise tax legislation of the Government of Canada or any Provincial or Territorial legislation, affects the cost of the Work to the Contractor, and occurs
 - (a) after the date of submission by the Contractor of its bid; or
 - (b) after the date of submission of the last revision, if the Contractor's bid was revised;the Contract Amount shall be adjusted in the manner provided in paragraph 3) of GC5.3.
- 3) If a change referred to in paragraph 2) of GC5.3 occurs, the Contract Amount shall be increased or decreased by an amount established by an examination by Canada of the relevant records of the Contractor referred to in GC2.8 ACCOUNTS AND AUDITS to be the increase or decrease in the cost incurred by the Contractor that is directly attributable to that change.
- 4) For the purpose of paragraph 2) of GC5.3, if a tax is changed after the solicitation closing, but public notice of the change has been given by the Minister of Finance or the corresponding Provincial or Territorial authority before that closing, the change shall be deemed to have occurred before the solicitation closing.
- 5) Notwithstanding paragraphs 2) to 4) of GC5.3, no adjustment to the Contract Amount in respect of the Work or a part thereof shall be made for a change in any imposition referred to in this section that occurs after the date required by the Contract for completion of the Work or that part of the Work.

GC5.4 PROGRESS PAYMENT

- 1) On the expiration of a payment period, the Contractor shall deliver to Canada
 - (a) a written progress claim in a form acceptable to Canada that fully describes any part of the Work that has been completed, and any Material that was delivered to the Work site but not incorporated into the Work, during that payment period, and
 - (b) a completed and signed statutory declaration containing a declaration that, up to the date of the progress claim, the Contractor has complied with all lawful obligations with

respect to the Labour Conditions and that, in respect of the Work, all lawful obligations of the Contractor to its Subcontractors and Suppliers, referred to collectively in the declaration as "subcontractors and suppliers", have been fully discharged.

- 2) Within 10 days of receipt of a progress claim and statutory declaration from the Contractor, Canada shall inspect, or cause to have inspected, the part of the Work and the Material described in the progress claim, and shall issue a progress report to the Contractor, that indicates the value of the part of the Work and the Material described in the progress claim that, in the opinion of Canada
 - (a) is in accordance with the Contract; and
 - (b) was not included in any other progress report relating to the Contract.
- 3) Subject to GC5.2 AMOUNT PAYABLE, and paragraph 5) of GC5.4, Canada shall pay the Contractor an amount that is equal to
 - (a) 95 percent of the value that is indicated in Canada's progress report if a labour and material payment bond has been furnished by the Contractor; or
 - (b) 90 percent of the value that is indicated in Canada's progress report if a labour and material payment bond has not been furnished by the Contractor.
- 4) Canada shall pay the amount referred to in paragraph 3) of GC5.4 not later than
 - (a) 30 days after receipt by Canada of both a progress claim and a statutory declaration referred to in paragraph 1) of GC5.4; or
 - (b) 15 days after receipt by Canada of the Contractor's progress schedule or updated progress schedule, in accordance with GC3.1 PROGRESS SCHEDULE,whichever is later.
- 5) In the case of the Contractor's first progress claim, it is a condition precedent to Canada's obligation under paragraph 3) of GC5.4 that the Contractor has provided all necessary documentation required by the Contract for the first progress claim.

GC5.5 SUBSTANTIAL PERFORMANCE OF THE WORK

- 1) If, at any time before the issuance of a Certificate of Completion, Canada determines that the Work has reached Substantial Performance as described in subparagraph 1) (b) of GC1.1.4 SUBSTANTIAL PERFORMANCE, Canada shall issue a Certificate of Substantial Performance to the Contractor. The Certificate of Substantial Performance shall state or describe
 - (a) the date of Substantial Performance;
 - (b) the parts of the Work not completed to the satisfaction of Canada; and
 - (c) all things that must be done by the Contractor before a Certificate of Completion is issued and before the 12-month warranty period referred to in GC3.13 WARRANTY AND RECTIFICATION OF DEFECTS IN WORK commences for the said parts and all the said things.

- 2) The issuance of a Certificate of Substantial Performance does not relieve the Contractor from the Contractor's obligations under GC3.11 DEFECTIVE WORK.
- 3) Subject to GC5.2 AMOUNT PAYABLE and paragraph 4) of GC5.5, Canada shall pay the Contractor the amount referred to in paragraph 1) of GC5.2 AMOUNT PAYABLE, less the aggregate of
 - (a) the sum of all payments that were made pursuant to GC5.4 PROGRESS PAYMENT;
 - (b) an amount that is equal to Canada's estimate of the cost to Canada of rectifying defects described in the Certificate of Substantial Performance; and
 - (c) an amount that is equal to Canada's estimate of the cost to Canada of completing the parts of the Work described in the Certificate of Substantial Performance other than defects listed therein.
- 4) Canada shall pay the amount referred to in paragraph 3) of GC5.5 not later than
 - (a) 30 days after the date of issue of a Certificate of Substantial Performance, or
 - (b) 15 days after the Contractor has delivered to Canada
 - (i) a statutory declaration containing a declaration by the Contractor that up to the date of the Certificate of Substantial Performance, the Contractor has complied with all lawful obligations with respect to the Labour Conditions, discharged all its lawful obligations to its Subcontractors and Suppliers in respect of the work under the Contract, and discharged its lawful obligations referred to in GC1.8 LAWS, PERMITS AND TAXES;
 - (ii) evidence of compliance with workers' compensation legislation in accordance with GC1.9 WORKERS' COMPENSATION; and
 - (iii) an update of the progress schedule in accordance with the requirements of GC3.1 PROGRESS SCHEDULE;

whichever is later.

GC5.6 FINAL COMPLETION

- 1) When Canada is of the opinion that the Contractor has complied with the Contract and all orders and directions made pursuant thereto, and that the Work has been completed as described in GC1.1.5 COMPLETION, Canada shall issue a Certificate of Completion to the Contractor and, if the Work or a portion of the Work is subject to a Unit Price Arrangement, Canada shall issue a Certificate of Measurement that shall, subject to GC8, be binding upon and conclusive between Canada and the Contractor as to the quantities referred to therein.
- 2) Subject to GC5.2 AMOUNT PAYABLE and paragraph 3) of GC5.6, Canada shall pay the Contractor the amount referred to in GC5.2 AMOUNT PAYABLE, less the aggregate of the sum of all payments that were made pursuant to GC5.4 PROGRESS PAYMENT and GC5.5 SUBSTANTIAL PERFORMANCE OF WORK.
- 3) Canada shall pay the amount referred to in paragraph 2) of GC5.6 not later than
 - (a) 60 days after the date of issue of a Certificate of Completion; or

- (b) 15 days after the Contractor has delivered to Canada
 - (i) a statutory declaration which contains a declaration by the Contractor that all of the Contractor's lawful obligations and any lawful claims against the Contractor that arose out of the performance of the Contract have been discharged and satisfied; and
 - (ii) evidence of compliance with workers' compensation legislation in accordance with GC1.9 WORKERS' COMPENSATION;

whichever is later.

GC5.7 PAYMENT NOT BINDING ON CANADA

- 1) Neither acceptance of a progress claim or progress report, nor any payment made by Canada under the Contract, nor partial or entire use or occupancy of the Work by Canada shall constitute an acceptance by Canada of any portion of the Work or Material that is not in accordance with the requirements of the Contract.

GC5.8 CLAIMS AND OBLIGATIONS

- 1) The Contractor shall discharge all the Contractor's lawful obligations and shall satisfy all lawful claims against the Contractor arising out of the performance of the Work at least as often as the Contract requires Canada to pay the Contractor.
- 2) Whenever requested to do so by Canada, the Contractor shall make a statutory declaration declaring to the existence and condition of any obligations and claims against the Contractor arising out of the performance of the Work.
- 3) In order to discharge lawful obligations of and satisfy lawful claims against the Contractor or its Subcontractors arising out of the performance of the Contract, Canada may pay an amount that is due and payable to the Contractor directly to the claimant. Such payment is, to the extent of the payment, a discharge of Canada's liability to the Contractor under the Contract and may be deducted from any amount payable to the Contractor under the Contract.
- 4) For the purposes of paragraph 3) of GC5.8, and subject to paragraph 6) of GC5.8, a claim or obligation shall be considered lawful when it is so determined by
 - (a) a court of legal jurisdiction;
 - (b) an arbitrator duly appointed to arbitrate the claim; or
 - (c) the written consent of the Contractor authorizing payment of the claim or obligation.
- 5) If a claim or obligation would have been subject to the provisions of Provincial or Territorial lien legislation or, in the Province of Quebec, the law relating to legal hypothecs had the Contractor been performing the Work for an entity other than Canada
 - (a) such amount as may be paid by Canada pursuant to paragraphs 3) and 4) of GC5.8 shall not exceed the amount that the Contractor would have been obliged to pay had the provisions of such legislation or law been applicable to the Work;

- (b) a claimant need not comply with the provisions of such legislation, setting out the steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which the claimant might have had; and
 - (c) for the purposes of determining the entitlement of a claimant, the notice required by paragraph 8) of GC5.8 shall be deemed to replace the registration or provision of notice after the performance of work as required by any applicable legislation and no claim shall be deemed to have expired, become void or unenforceable by reason of the claimant not commencing any action within the time prescribed by such legislation.
- 6) The Contractor shall, at the request of any claimant, submit to binding arbitration those questions that need to be answered to establish the entitlement of the claimant to payment. The arbitration shall have as parties to it any Subcontractor or Supplier to whom the claimant supplied Material, performed work or rented equipment should such Subcontractor or Supplier wish to be adjoined, and Canada shall not be a party to such arbitration. Subject to any agreement between the Contractor and the claimant, the arbitration shall be conducted in accordance with the governing Provincial or Territorial legislation applicable to the site of the Work.
- 7) Paragraph 3) of GC5.8 shall apply only to claims and obligations
- (a) the notification of which has set forth the amount claimed to be owing and the person who by contract is primarily liable and has been received by Canada in writing before final payment is made to the Contractor pursuant to GC5.6 FINAL COMPLETION, and within 120 days of the date on which the claimant
 - (i) should have been paid in full under the claimant's contract with the Contractor, its Subcontractor or Supplier if the claim is for money that was lawfully required to be held back from the claimant; or
 - (ii) performed the last of the services, work or labour, or furnished the last of the Material pursuant to the claimant's contract with the Contractor or its Subcontractor or Supplier where the claim is for money not lawfully required to be held back from the claimant; and
 - (b) the proceedings to determine the right to payment of which, pursuant to paragraph 5) of GC5.8, shall have commenced within one year from the date that the notification required by subparagraph 7)(a) of GC5.8 was received by Canada.
- 8) Upon receipt of a notice of claim, Canada may withhold, from any amount that is due and payable to the Contractor pursuant to the Contract, the full amount of the claim or any portion thereof.
- 9) Canada shall notify the Contractor in writing in a timely manner of receipt of any claim and of the intention of Canada to withhold funds. At any time thereafter and until payment is made to the claimant, the Contractor may be entitled to post, with Canada, security in a form acceptable to Canada in an amount equal to the value of the claim, and upon receipt of such security Canada shall release to the Contractor any funds that would be otherwise payable to the Contractor, that were withheld pursuant to the provisions of this clause in respect of the claim of any claimant for whom the security stands.

GC5.9 RIGHT OF SETOFF

- 1) Without limiting any right of setoff or deduction given or implied by law or elsewhere in the Contract, Canada may set off any amount payable to Canada by the Contractor under the

Contract, or under any current contract, against any amount payable to the Contractor under the Contract.

- 2) For the purposes of paragraph 1) of GC5.9, "current contract" means a contract between Canada and the Contractor
 - (a) under which the Contractor has an undischarged obligation to perform or supply work, labour or material; or
 - (b) in respect of which Canada has, since the date of the Contract, exercised any right to take the work that is the subject of that contract out of the Contractor's hands.

GC5.10 ASSESSMENTS AND DAMAGES FOR LATE COMPLETION

- 1) For the purposes of this clause
 - (a) the Work shall be deemed to be completed on the date of the Certificate of Completion; and
 - (b) the "period of delay" means the number of days commencing on the day fixed for completion of the Work and ending on the day immediately preceding the day on which the Work is completed but does not include any day within a period of extension granted pursuant to GC6.5 DELAYS AND EXTENSION OF TIME and any other day on which, in the opinion of Canada, completion of the Work was delayed for reasons beyond the control of the Contractor.
- 2) If the Contractor does not complete the Work by the day fixed for its completion but completes it thereafter, the Contractor shall pay Canada an amount equal to the aggregate of
 - (a) all salaries, wages and travelling expenses incurred by Canada in respect of persons overseeing the performance of the Work during the period of delay;
 - (b) the cost incurred by Canada as a result of the inability to use the completed Work for the period of delay; and
 - (c) all other expenses and damages incurred or sustained by Canada during the period of delay as a result of the Work not being completed by the day fixed for its completion.
- 3) Canada may waive the right of Canada to the whole or any part of the amount payable by the Contractor pursuant to paragraph 2) of GC5.10 if, in the opinion of Canada, it is in the public interest to do so.

GC5.11 DELAY IN MAKING PAYMENT

- 1) Notwithstanding GC1.5 TIME OF THE ESSENCE, any delay by Canada in making any payment when it is due pursuant to GC5 TERMS OF PAYMENT, shall not be a breach of the Contract by Canada.
- 2) Subject to paragraph 3) of GC5.11, Canada shall pay to the Contractor simple interest at the Average Bank Rate plus 3 percent per annum on any amount that is overdue pursuant to paragraph 3) of GC5.1 INTERPRETATION, and the interest shall apply from and include the day such amount became overdue until the day prior to the date of payment.

- 3) Interest shall be paid without demand by the Contractor except that
 - (a) in respect of amounts that are less than 15 days overdue, no interest shall be paid in respect of payment made within such 15 days unless the Contractor so demands after such amounts have become due and payable; and
 - (b) interest shall not be payable or paid on overdue advance payments, if any.

GC5.12 INTEREST ON SETTLED CLAIMS

- 1) For the purposes of this clause, a claim means a disputed amount subject to negotiation between Canada and the Contractor under the Contract.
- 2) A claim is deemed to have been settled when an agreement in writing is signed by Canada and the Contractor setting out the amount of the claim to be paid by Canada and the items of work for which the said amount is to be paid.
- 3) A settled claim is deemed to be outstanding from the day immediately following the date the said claim would have been due and payable under the Contract had it not been disputed.
- 4) Canada shall pay to the Contractor simple interest on the amount of a settled claim at the Average Bank Rate plus 3 percent per annum from the date the settled claim was deemed to be outstanding until the day prior to the date of payment.

GC5.13 RETURN OF SECURITY DEPOSIT

- 1) After a Certificate of Substantial Performance has been issued, and if the Contractor is not in breach of nor in default under the Contract, Canada shall return to the Contractor all or any part of a Security Deposit that, in the opinion of Canada, is not required for the purposes of the Contract.
- 2) After a Certificate of Completion has been issued, Canada shall return to the Contractor the remainder of any security deposit unless the Contract stipulates otherwise.
- 3) If the security deposit was paid into the Consolidated Revenue Fund of Canada, Canada shall pay interest thereon to the Contractor at a rate established pursuant to section 21(2) of the *Financial Administration Act (FAA)*.

GC6 DELAYS AND CHANGES IN THE WORK

- GC6.1 CHANGES IN THE WORK
- GC6.2 CHANGES IN SUBSURFACE CONDITIONS
- GC6.3 HUMAN REMAINS, ARCHAEOLOGICAL REMAINS AND ITEMS OF HISTORICAL OR SCIENTIFIC INTEREST
- GC6.4 DETERMINATION OF PRICE
 - GC6.4.1 Price Determination Prior to Undertaking Changes
 - GC6.4.2 Price Determination Following Completion of Changes
 - GC6.4.3 Price Determination - Variations in Tendered Quantities
- GC6.5 DELAYS AND EXTENSION OF TIME

GC6.1 CHANGES IN THE WORK

- 1) At any time before issuance of a Certificate of Completion, Canada may issue orders for additions, deletions or other changes to the Work, or changes in the location or position of the whole or any part of the Work, if the addition, deletion, change or other revision is deemed by Canada to be consistent with the general intent of the Contract.
- 2) An order referred to in paragraph 1) of GC6.1 shall be in writing and given to the Contractor in accordance with GC2.3 NOTICES.
- 3) Upon receipt of an order, the Contractor shall promptly perform the work in accordance with the order as if the order had appeared in and been part of the original Contract.
- 4) If anything done or omitted by the Contractor pursuant to an order increases or decreases the cost of the Work to the Contractor, payment for the work shall be made in accordance with GC6.4 DETERMINATION OF PRICE.

GC6.2 CHANGES IN SUBSURFACE CONDITIONS

- 1) If, during the performance of the Work, the Contractor encounters subsurface conditions that are substantially different from the subsurface conditions described in the tender documents supplied to the Contractor, or a reasonable assumption of fact based thereon, the Contractor shall give notice to Canada immediately upon becoming aware of the situation.
- 2) If the Contractor is of the opinion that the Contractor may incur or sustain any extra expense or any loss or damage that is directly attributable to the changed subsurface conditions, the Contractor shall within 10 days of the date the changed subsurface conditions were encountered, give Canada written notice of intention to claim for that extra expense, loss or damage.
- 3) If the Contractor has given a notice referred to in paragraph 2) of GC6.2, the Contractor shall give Canada a written claim for extra expense, loss or damage no later than 30 days after the date that a Certificate of Substantial Performance is issued.
- 4) A written claim referred to in paragraph 3) of GC6.2 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable Canada to determine whether or not the claim is justified, and the Contractor shall supply such further and other information for that purpose as Canada requires.
- 5) If Canada determines that a claim referred to in paragraph 3) of GC6.2 is justified, Canada shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC6.4 DETERMINATION OF PRICE.

- 6) If, in the opinion of Canada, the Contractor effects a saving of expenditure that is directly attributable to a substantial difference between the information relating to subsurface conditions at the site of the Work that is contained in the tender documents, or a reasonable assumption of fact based thereon, and the actual subsurface conditions encountered by the Contractor, the Contract Amount shall be reduced by the amount of the saving of expenditure determined in accordance with GC6.4 DETERMINATION OF PRICE.
- 7) If the Contractor fails to give a notice referred to in paragraph 2) of GC6.2 and a claim referred to in paragraph 3) of GC6.2 within the times stipulated, an extra payment shall not be made to the Contractor in respect of the occurrence.
- 8) Canada does not warrant the content expressed in any subsurface report available for the perusal of the Contractor that does not form part of the tender and contract documents.

GC6.3 HUMAN REMAINS, ARCHAEOLOGICAL REMAINS AND ITEMS OF HISTORICAL OR SCIENTIFIC INTEREST

- 1) For the purposes of this clause
 - (a) "human remains" means the whole or any part of a deceased human being, irrespective of the time of death;
 - (b) "archaeological remains" are items, artefacts or things made, modified or used by human beings in antiquity and may include, but not be limited to, stone, wood or iron structures or monuments, dump deposits, bone artefacts, weapons, tools, coins, and pottery; and
 - (c) "items of historical or scientific interest" are naturally occurring or manufactured objects or things of any age that are not archaeological remains but may be of interest to society because of their historical or scientific significance, value, rarity, natural beauty, or other quality.
- 2) If, during the course of the Work, the Contractor encounters any object, item or thing which is described in paragraph 1) of GC6.3 or which resembles any object, item or thing described in paragraph 1) of GC6.3, the Contractor shall
 - (a) take all reasonable steps, including stopping work in the affected area, to protect and preserve the object, item or thing;
 - (b) immediately notify Canada of the circumstances in writing; and
 - (c) take all reasonable steps to minimize additional costs that may accrue as a result of any work stoppage.
- 3) Upon receipt of a notification in accordance with subparagraph 2)(b) of GC6.3, Canada shall promptly determine whether the object, item or thing is one described in, or contemplated by paragraph 1) of GC6.3, and shall notify the Contractor in writing of any action to be performed, or work to be carried out, by the Contractor as a result of Canada's determination.
- 4) Canada may, at any time, enlist the services of experts to assist in the investigation, examination, taking of measurements or other such recordings, placing of permanent protection around or removing of the object, item or thing encountered by the Contractor, and the Contractor shall, to the satisfaction of Canada, allow them access and co-operate with them in the carrying out of their duties and obligations.

- 5) Human remains, archaeological remains and items of historical or scientific interest encountered at the site of the Work shall be deemed to be the property of Canada.
- 6) Except as may be otherwise provided for in the Contract, the provisions of GC6.4 DETERMINATION OF PRICE and GC6.5 DELAYS AND EXTENSION OF TIME shall apply.

GC6.4 DETERMINATION OF PRICE

GC6.4.1 Price Determination Prior to Undertaking Changes

- 1) If a Lump Sum Arrangement applies to the Contract or a part thereof, the price of any change shall be the aggregate estimated cost of labour, Plant and Material that is required for the change as agreed upon in writing by the Contractor and Canada plus a negotiated allowance for supervision, co-ordination, administration, overhead, margin and the risk of undertaking the work within the stipulated amount.
- 2) If a Unit Price Arrangement applies to the Contract or a part thereof, the Contractor and Canada may, by agreement in writing, add items, units of measurement, estimated quantities and prices per unit to the Unit Price Table.
- 3) A price per unit referred to in paragraph 2) of GC6.4.1 shall be determined on the basis of the aggregate estimated cost of labour, Plant and Material that is required for the additional item as agreed upon by the Contractor and Canada, plus a negotiated allowance.
- 4) To facilitate approval of the price of the change or the additional price per unit as applicable, the Contractor shall submit a cost estimate breakdown identifying, as a minimum, the estimated cost of labour, Plant, Material, each subcontract amount, and the amount of the negotiated allowance.
- 5) If no agreement is reached as contemplated in paragraph 1) of GC6.4.1, the price shall be determined in accordance with GC6.4.2.
- 6) If no agreement is reached, as contemplated in paragraphs 2) and 3) of GC6.4.1, Canada shall determine the class and the unit of measurement of the item of labour, Plant or Material and the price per unit shall be determined in accordance with GC6.4.2.

GC6.4.2 Price Determination Following Completion of Changes

- 1) If it is not possible to predetermine, or if there is failure to agree upon the price of a change in the Work, the price of the change shall be equal to the aggregate of
 - (a) all reasonable and proper amounts actually expended or legally payable by the Contractor in respect of the labour, Plant and Material that fall within one of the classes of expenditure described in paragraph 2) of GC6.4.2, that are directly attributable to the performance of the Contract;
 - (b) an allowance for profit and all other expenditures or costs, including overhead, general administration costs, financing and interest charges, in an amount that is equal to 10 percent of the sum of the expenses referred to in subparagraph 1)(a) of GC6.4.2; and
 - (c) interest on the amounts determined under subparagraphs 1)(a) and 1)(b) of GC6.4.2 calculated in accordance with GC5.12 INTEREST ON SETTLED CLAIMS;

- 2) The cost of labour, Plant and Material referred to in subparagraph 1)(a) of GC6.4.2 shall be limited to the following categories of expenditure:
- (a) payments to Subcontractors and Suppliers;
 - (b) wages, salaries, bonuses and, if applicable, travel and lodging expenses of employees of the Contractor located at the site of the Work and that portion of wages, salaries, bonuses and, if applicable, travel and lodging expenses of personnel of the Contractor generally employed at the head office or at a general office of the Contractor provided they are actually and properly engaged on the Work under the Contract;
 - (c) assessments payable under any statutory authority relating to workers' compensation, employment insurance, pension plan or holidays with pay, provincial health or insurance plans, environmental reviews, and Applicable Taxes collection costs;
 - (d) rent that is paid for Plant, or an amount equivalent to the said rent if the Plant is owned by the Contractor, that is necessary for and used in the performance of the Work, if the rent or the equivalent amount is reasonable and use of that Plant has been approved by Canada;
 - (e) payments for maintaining and operating Plant necessary for and used in the performance of the Work, and payments for effecting repairs thereto that, in the opinion of Canada, are necessary for the proper performance of the Contract, other than payments for any repairs to the Plant arising out of defects existing before its allocation to the Work;
 - (f) payments for Material that is necessary for and incorporated in the Work, or that is necessary for and consumed in the performance of the Contract;
 - (g) payments for preparation, delivery, handling, erection, installation, inspection, protection and removal of the Plant and Material necessary for and used in the performance of the Contract; and
 - (h) any other payments made by the Contractor with the approval Canada that are necessary for the performance of the Contract in accordance with the Contract Documents.

GC6.4.3 Price Determination - Variations in Tendered Quantities

- 1) Except as provided in paragraphs 2), 3), 4) and 5) of GC6.4.3, if it appears that the final quantity of labour, Plant and Material under a price per unit item shall exceed or be less than the estimated tendered quantity, the Contractor shall perform the Work or supply the Plant and Material required to complete the item and payment shall be made for the actual Work performed or Plant and Material supplied at the price per unit set out in the Contract.
- 2) If the final quantity of the price per unit item exceeds the estimated tendered quantity by more than 15 percent, either party to the Contract may make a written request to the other party to negotiate an amended price per unit for that portion of the item which exceeds 115 percent of the estimated tendered quantity, and to facilitate approval of any amended price per unit, the Contractor shall, on request, provide Canada with
 - (a) detailed records of the actual cost to the Contractor of performing or supplying the tendered quantity for the price per unit item up to the time the negotiation was requested; and

- (b) the estimated unit cost of labour, Plant and Material required for the portion of the item that is in excess of 115 percent of the tendered quantity.
- 3) If agreement is not reached as contemplated in paragraph 2) of GC6.4.3, the price per unit shall be determined in accordance with GC6.4.2.
- 4) If it appears that the final quantity of labour, Plant and Material under a price per unit item shall be less than 85 percent of the estimated tendered quantity, either party to the Contract may make a written request to the other party to negotiate a change to the price per unit for the item if
 - (a) there is a demonstrable difference between the unit cost to the Contractor of performing or supplying the estimated tendered quantity and the unit cost to the Contractor for performing or supplying the final quantity; and
 - (b) the difference in unit cost is due solely to the decrease in quantity and not to any other cause.
- 5) For the purposes of the negotiation referred to in paragraph 4) of GC6.4.3
 - (a) the onus of establishing, justifying and quantifying a proposed change lies with the party making the request for negotiation; and
 - (b) in no event shall the total price for an item that has been amended as a result of a reduction in quantity pursuant to paragraph 4) of GC6.4.3 exceed the amount that would have been payable to the Contractor had 85 percent of the tendered quantity actually been performed or supplied.

GC6.5 DELAYS AND EXTENSION OF TIME

- 1) Upon application of the Contractor made before the date first fixed for completion of the Work or before any other date previously fixed under this clause, Canada may extend the time for completion of the Work by fixing a new date if Canada determines that causes beyond the control of the Contractor have delayed its completion.
- 2) The Contractor's application shall be accompanied by the written consent of the bonding company whose bond forms part of the Contract Security.
- 3) Subject to paragraph 4) of GC6.5, no payment, other than a payment that is expressly stipulated in the Contract, shall be made by Canada to the Contractor for any extra expense, loss or damage incurred or sustained by the Contractor due to delay, whether or not the delay is caused by circumstances beyond the control of the Contractor.
- 4) If the Contractor incurs or sustains any extra expense or any loss or damage that is directly attributable to any neglect or delay that occurs after the date of the Contract on the part of Canada in providing any information or in doing any act that the Contract either expressly requires Canada to do or that would ordinarily be done by an owner in accordance with the practice of the trade, the Contractor shall give Canada written notice of intention to claim for that extra expense or loss or damage within ten working days of the date the neglect or delay first occurred.
- 5) When the Contractor has given a notice referred to in paragraph 4) of GC6.5, the Contractor shall give Canada a written claim for the extra expense, loss or damage no later than 30 days after the date that a Certificate of Completion is issued and not afterwards.

- 6) A written claim referred to in paragraph 5) of GC6.5 shall contain a sufficient description of the facts and circumstances of the occurrence that is the subject of the claim to enable Canada to determine whether or not the claim is justified and the Contractor shall supply such further and other information for that purpose as Canada may require.
- 7) If Canada determines that a claim referred to in paragraph 5) of GC6.5 is justified, Canada shall make an extra payment to the Contractor in an amount that is calculated in accordance with GC6.4 DETERMINATION OF PRICE.
- 8) If the Contractor fails to give a notice referred to in paragraph 4) and a claim referred to in paragraph 5) of GC6.5 within the times stipulated, an extra payment shall not be made to the Contractor in respect of the occurrence.

GC7 DEFAULT, SUSPENSION OR TERMINATION OF CONTRACT

- GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS
- GC7.2 SUSPENSION OF WORK
- GC7.3 TERMINATION OF CONTRACT
- GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN

GC7.1 TAKING THE WORK OUT OF THE CONTRACTOR'S HANDS

- 1) By giving notice in writing to the Contractor in accordance with GC2.3 NOTICES, Canada, without any other authorization, may take all or any part of the Work out of the Contractor's hands, and may employ such means as Canada sees fit to have the Work completed if the Contractor:
 - (a) fails to remedy any delay in the commencement or default in the diligent performance of the Work to the satisfaction of Canada within six days of Canada giving notice to the Contractor in writing in accordance with GC2.3 NOTICES;
 - (b) defaults in the completion of any part of the Work within the time fixed for its completion by the Contract;
 - (c) becomes insolvent, or has committed an act of bankruptcy, and has neither made a proposal to its creditors nor filed a notice of intention to make such a proposal, pursuant to the Bankruptcy and Insolvency Act;
 - (d) abandons the work;
 - (e) makes an assignment of the Contract without the consent required by GC1.16 ASSIGNMENT; or
 - (f) otherwise fails to observe or perform any of the provisions of the Contract.
- 2) If the whole or any part of the Work is taken out of the Contractor's hands, the Contractor's right to any further payment that is due or accruing due under the Contract is, subject only to paragraph 3) of GC7.1, extinguished, and the Contractor is liable to pay Canada, upon demand, an amount that is equal to the amount of all loss and damage incurred or sustained by Canada in respect of the Contractor's failure to complete the Work.
- 3) If the whole or any part of the Work that is taken out of the Contractor's hands is completed by Canada, Canada may pay the Contractor the amount, if any, of the holdback or a progress claim as determined by Canada that had accrued and was due prior to the date on which the Work was taken out of the Contractor's hands and that is not required for the purposes of having the Work performed or of compensating Canada for any other loss or damage incurred or sustained by reason of the Contractor's default.
- 4) The taking of the Work or any part thereof out of the Contractor's hands does not relieve the Contractor from any obligation under the Contract or imposed by law except the obligation to complete the performance of that part of the Work that was taken out of the Contractor's hands.
- 5) If the Work or any part thereof is taken out of the Contractor's hands, all Plant and Material and the interest of the Contractor, or its suppliers or subcontractors at any tier, in all real property, licences, powers and privileges acquired, used or provided by the Contractor, or its suppliers or subcontractors at any tier, under the Contract shall continue to be the property of Canada without compensation.

- 6) When Canada certifies that any Plant, Material, or any interest of the Contractor is no longer required for the purposes of the Work, or that it is not in the interests of Canada to retain that Plant, Material, or interest, it shall revert to the Contractor.
- 7) If the Contractor has become insolvent or has committed an act of bankruptcy, and has either made a proposal to its creditors or filed a notice of intention to make such a proposal, pursuant to the *Bankruptcy and Insolvency Act*, the Contractor shall immediately forward a copy of the proposal or the notice of intention to Canada.

GC7.2 SUSPENSION OF WORK

- 1) When, in Canada's opinion, it is in the public interest to do so, Canada may require the Contractor to suspend performance of the Work either for a specified or an unspecified period, by giving a notice of suspension in writing to the Contractor in accordance with GC2.3 NOTICES.
- 2) When a notice of suspension is received by the Contractor, the Contractor shall suspend all operations in respect of the Work except those that Canada determines are necessary for the care and preservation of the Work, Plant and Material.
- 3) During a period of suspension, the Contractor shall not remove any part of the Work, Plant or Material from its site without the consent of Canada.
- 4) If a period of suspension is 60 days or less, the Contractor shall resume the performance of the Work on the expiration of that period, and the Contractor is entitled to be paid the extra costs necessarily incurred by the Contractor as a result of the suspension, determined in accordance with GC6.4 DETERMINATION OF PRICE.
- 5) If a period of suspension is more than 60 days, Canada and the Contractor may agree that the performance of the Work shall be continued by the Contractor, and the Contractor shall resume performance of the Work subject to any terms and conditions agreed upon by Canada and the Contractor. If Canada and the Contractor do not agree that performance of the Work shall be continued by the Contractor, or upon the terms and conditions under which the Contractor shall continue the Work, the notice of suspension shall be deemed to be a notice of termination pursuant to GC7.3 TERMINATION OF CONTRACT.

GC7.3 TERMINATION OF CONTRACT

- 1) Canada may terminate the Contract at any time by giving a notice of termination in writing to the Contractor in accordance with GC2.3 NOTICES.
- 2) If the Contractor receives a notice of termination, the Contractor shall forthwith cease all operations in performance of the Contract, subject to any conditions stipulated in the notice.
- 3) Subject to paragraph 4) of GC7.3, if the Contract is terminated, Canada shall pay the Contractor an amount determined to be due to the Contractor pursuant to GC6.4 DETERMINATION OF PRICE less the aggregate of all amounts that were paid to the Contractor by Canada and all amounts that are due to Canada from the Contractor pursuant to the Contract.
- 4) In no event shall the total amount payable by Canada to the Contractor exceed the amount, calculated in accordance with GC5 TERMS OF PAYMENT, that would have been payable to the Contractor had the Contractor completed the Work.

- 5) Payment to the Contractor, if any, shall be made as soon as practicable under the circumstances.

GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN

- 1) If the Work is taken out of the Contractor's hands, or the Contractor is in breach of, or in default under, the Contract, Canada may convert a security deposit to Canada's own use.
- 2) If Canada converts a security deposit, the amount realized shall be deemed to be an amount due from Canada to the Contractor under the Contract.
- 3) Any balance of the amount realized that remains after payment of all losses, damage and claims of Canada and others shall be paid by Canada to the Contractor if, in the opinion of Canada, it is not required for the purposes of the Contract.

GC8 DISPUTE RESOLUTION

GC8.1	INTERPRETATION
GC8.2	CONSULTATION AND CO-OPERATION
GC8.3	NOTICE OF DISPUTE
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GC8.8.12	Subsequent Proceedings

GC8.1 INTERPRETATION

- 1) "dispute" means any disagreement regarding any issue identified by the Contractor in the notice submitted to Canada in accordance with paragraph 2 of GC8.3 NOTICE OF DISPUTE, and includes any claim by the Contractor arising from such disagreement and any counterclaim by Canada, but does not include any claim by either party for punitive or exemplary damages, injury to persons, death, or any claim based on an allegation of libel or slander.
- 2) The alternative dispute resolution procedures set out in GC8, do not apply to any claim by Canada against the Contractor except any counterclaim in a dispute as defined in paragraph 1 of GC8.1, including, but not limited to, any claim of setoff regarding any amount due to Canada under GC5.10 ASSESSMENT AND DAMAGES FOR LATE COMPLETION.

GC8.2 CONSULTATION AND CO-OPERATION

- 1) The parties agree to maintain open and honest communication throughout the performance of the Contract.
- 2) The parties agree to consult and co-operate with each other in the furtherance of the Work and the resolution of problems or differences that may arise.

GC8.3 NOTICE OF DISPUTE

- 1) Any difference between the parties to the Contract of any nature arising out of or in connection with the Contract which could result in a claim by the Contractor against Canada, and which is not settled by consultation and co-operation as envisaged in GC8.2 CONSULTATION AND CO-OPERATION, shall be resolved in the first instance by Canada, whose written decision or direction shall be final and binding subject only to the provisions of

GC8. Such written decision or direction includes, but is not limited to, any written decision or direction by Canada under any provision of the General Conditions.

- 2) The Contractor shall be deemed to have accepted the decision or direction of Canada referred to in paragraph 1) of GC8.3 and to have expressly waived and released Canada from any claim in respect of the particular matter dealt with in that decision or direction unless, within 15 working days after receipt of the decision or direction, the Contractor submits to Canada a written notice of dispute requesting formal negotiation under GC8.4 NEGOTIATION. Such notice shall refer specifically to GC8.4 NEGOTIATION, and shall specify the issues in contention and the relevant provisions of the Contract.
- 3) The giving of a written notice in accordance with paragraph 2) of GC8.3 shall not relieve the Contractor from complying with the decision or direction that is the subject of the dispute. Such compliance, however, shall not be construed as an admission by the Contractor of the correctness of such decision or direction.
- 4) If a dispute is not resolved promptly, Canada shall give such instructions as, in Canada's opinion, are necessary for the proper performance of the Work and to prevent delays pending a resolution of the matter. Unless Canada terminates the Contract, orders the Contractor to suspend the Work, or takes the Work out of the hands of the Contractor, the Contractor shall continue to perform the Work in accordance with the provisions and requirements of the Contract and the instructions of Canada. Such performance shall not prejudice any claim that the Contractor may have.
- 5) Nothing in GC8 relieves the Contractor from its obligation to provide any other notice required by the Contract within the time specified in the Contract, including but not limited to, any notice required under GC6.2 CHANGES IN SUBSURFACE CONDITIONS.

GC8.4 NEGOTIATION

- 1) Within 10 working days after receipt by Canada of a notice referred to in paragraph 2) of GC8.3 NOTICE OF DISPUTE, or within such other period of time as may be mutually agreed to, the parties shall commence formal negotiations in order to resolve the dispute. Negotiations shall occur initially between representatives of the Contractor and Canada who play a direct supervisory role in the performance, administration or management of the Contract.
- 2) If the representatives referred to in paragraph 1) of GC8.4 are unable to resolve some or all of the issues which are the subject of the negotiations within 10 working days, the parties shall refer the remaining issues which are in dispute to a second level of negotiation between a principal or principals of the Contractor and a senior level manager or senior level managers representing Canada.
- 3) If negotiations fail to resolve the dispute within 30 working days from the date of delivery of the notice referred to in paragraph 2) of GC8.3 NOTICE OF DISPUTE, or within such longer period as may have been agreed to by the parties, the Contractor may, by giving written notice to Canada, in accordance with GC2.3 NOTICES, within 10 working days from the end of such period, request that mediation be undertaken to assist the parties to reach agreement on the outstanding issues.
- 4) If the Contractor does not request mediation within the period permitted by paragraph 3) of GC8.4, the Contractor shall be deemed to have accepted the decision or direction of Canada under paragraph 1) of GC8.3 NOTICE OF DISPUTE and to have expressly waived and released Canada from any claim in respect of the particular matter dealt with in that decision or direction.

GC8.5 MEDIATION

- 1) If the Contractor has requested mediation in accordance with paragraph 3) of GC8.4 NEGOTIATION, mediation shall be conducted in accordance with GC8.8 RULES FOR MEDIATION OF DISPUTES.
- 2) If a Project Mediator has not previously been appointed for the purposes of the Contract, a Project Mediator shall be appointed in accordance with GC8.8 RULES FOR MEDIATION OF DISPUTES forthwith after delivery of a notice in accordance with paragraph 3) of GC8.4 NEGOTIATION, requesting mediation.
- 3) If the dispute has not been resolved within
 - (a) Ten (10) working days following the appointment of a Project Mediator in accordance with paragraph 2) of GC8.5, if a Project Mediator was not previously appointed;
 - (b) Ten (10) working days following receipt by Canada of a written notice in accordance with paragraph 3) of GC8.4 NEGOTIATION, if a Project Mediator was previously appointed;
or
 - (c) such other longer period as may have been agreed to by the parties;

the Project Mediator shall terminate the mediation by giving written notice to the parties stating the effective date of termination.

GC8.6 CONFIDENTIALITY

- 1) All information exchanged during alternative dispute resolution procedures, by whatever means, shall be without prejudice and shall be treated as confidential by the parties and their representatives, unless otherwise required by law. However, evidence that is independently admissible or discoverable shall not be rendered inadmissible or non-discoverable by virtue of its use during an alternative dispute resolution process.

GC8.7 SETTLEMENT

- 1) Any agreement to settle all or any part of a dispute, by whatever means, shall be in writing and be signed by the parties or their authorized representatives.

GC8.8 RULES FOR MEDIATION OF DISPUTES

GC8.8.1 Interpretation

In these Rules

- 1) "Coordinator" means the person designated by Canada to act as the Dispute Resolution Coordinator.

GC8.8.2 Application

- 1) By mutual agreement, the parties may change or make additions to the Rules.

GC8.8.3 Communication

- 1) Written communications pursuant to these Rules shall be given in accordance with GC2.3 NOTICES.

GC8.8.4 Appointment of Project Mediator

- 1) The parties to the Contract may, by mutual consent, at any time after entry into the Contract, appoint a mediator (the "Project Mediator") to conduct mediation proceedings in accordance with these Rules for Mediation of Disputes, in regard to any dispute that may arise with regard to the interpretation, application or administration of the Contract. In this case, they shall jointly enter into a contract with the appointed Project Mediator, which contract shall be in a form drafted by the Coordinator and agreed to by the parties.
- 2) If the parties do not appoint a Project Mediator pursuant to paragraph 1) of GC8.8.4, the parties shall appoint a Project Mediator within 17 working days following receipt of a written notice from the Contractor, in accordance with GC2.3 NOTICES, requesting that mediated negotiations be undertaken in accordance with these Rules to assist the parties to reach agreement on any outstanding issues that may be in dispute. Any contract entered into with the appointed Project Mediator shall meet the requirements as set out for the contract described in paragraph 1) of GC8.8.4.
- 3) When mediation is requested by the Contractor pursuant to paragraph 3) of GC8.4 NEGOTIATION, if the parties have previously entered into a contract with a Project Mediator, the parties shall within 2 days send to both the Project Mediator and the Coordinator
 - (a) a copy of the notice requesting negotiation under paragraph 2) of GC8.3 NOTICE OF DISPUTE;
 - (b) a copy of Canada's written position in relation to the notice, the issues in contention and the relevant provisions of the contract; and
 - (c) a copy of the Contractor's written request for mediation required under paragraph 3) of GC8.4 NEGOTIATION.
- 4) If the parties have not agreed on a Project Mediator, the parties shall forthwith provide the Coordinator with the written materials referred to in subparagraphs 3)(a), 3)(b) and 3)(c) of GC8.8.4 together with a request that the Coordinator assist in the appointment of a mutually acceptable Project Mediator in accordance with these Rules.
- 5) Within 5 working days following receipt of the request and materials referred to in paragraph 4) of GC8.8.4, the Coordinator shall provide the parties with a list of qualified private sector mediators obtained from an independent and impartial entity, together with instructions to each party to individually and confidentially select and rank their preferred and fully acceptable choices of mediator in descending order. Each mediator listed shall be impartial and independent of the parties, and shall be an experienced and skilled commercial mediator, preferably with knowledge of the subject matter of the dispute.
- 6) Within 10 working days of receipt of the list referred to in paragraph 5) of GC8.8.4 each party shall comply with the instructions accompanying the list(s) and shall deliver the completed listing to the Coordinator.

- 7) Within 2 working days following receipt of the completed listings, the Coordinator shall select the highest common ranked mediator to act as Project Mediator for the purposes of the contract.
- 8) In the event of a tie, the Coordinator shall consult both parties to re-evaluate their rankings in order to assist the Coordinator in selecting a Project Mediator acceptable to both parties. If the parties cannot agree upon a Project Mediator, the Coordinator shall forthwith provide the parties with a second list of mediators and the procedure shall be repeated.
- 9) If the parties have not previously entered into a contract with a mutually acceptable Project Mediator, the Coordinator shall use reasonable efforts to negotiate a contract with a mutually acceptable Project Mediator on behalf of the parties, which contract shall incorporate or otherwise comply with the provisions of these Rules. If negotiations are unsuccessful, or if for other reason the individual is unwilling or unable to enter into a contract to act as Project Mediator, the Coordinator shall repeat the process with the second-highest common ranked mediator.
- 10) The parties agree that, upon successful completion of the negotiations referred to in paragraph 9) of GC8.8.4, they shall jointly enter into a contract with the selected Project Mediator, which contract shall be in a form drafted by the Coordinator and agreed to by the parties.
- 11) Upon execution of the contract with the Project Mediator referred to in paragraph 10) of GC8.8.4 the Coordinator shall provide the Project Mediator with copies of the documents referred to in paragraph 3) of GC8.8.4.

GC8.8.5 Confidentiality

- 1) Subject to paragraph 2) of GC8.8.5, and unless otherwise agreed in writing by the parties, the Project Mediator, the parties and their counsel or representatives shall keep confidential all matters and documents disclosed during mediation proceedings except where the disclosure is necessary for any implementation of any agreement reached or is required by law.
- 2) Evidence that is independently admissible or discoverable in any arbitral or judicial proceeding shall not be rendered inadmissible or non-discoverable by virtue of its use in mediation proceedings.
- 3) Neither party shall make transcripts, minutes or other records of a mediation conference.
- 4) The personal notes and written opinions of the Project Mediator made in relation to mediation are in the Project Mediator's sole possession and control, are confidential, and may not be used in any subsequent proceeding between the parties or where they are opposed in interest without the express written permission of the parties.
- 5) All information exchanged during mediation procedures, by whatever means, shall be without prejudice and shall be treated as confidential by the parties and their representatives, unless otherwise required by law.

GC8.8.6 Time and Place of Mediation

- 1) The Project Mediator, in consultation with the parties shall set the date, time and place of any mediation conference as soon as possible, bearing in mind that, subject to agreement to

the contrary between the parties, only 10 working days are available within which to attempt to settle the dispute.

GC8.8.7 Representation

- 1) Representatives of the parties may be accompanied at the mediation conference by legal counsel or any other person.
- 2) If the Project Mediator is a lawyer, the Project Mediator shall not provide legal advice to a party during the course of the mediation conference, but may recommend that a party obtain independent legal advice before finalizing a settlement agreement.

GC8.8.8 Procedure

- 1) The parties agree to an exchange of all facts, information and documents upon which they intend to rely in any oral or written presentation during the mediation. This exchange shall be completed no later than 2 working days prior to the date set for a mediation conference.
- 2) The Project Mediator shall be free to meet with the parties individually during a mediation conference if the Project Mediator is of the opinion that this may improve the chances of a mediated settlement, and either party may request such an individual meeting at any time.
- 3) The parties may agree to extend the 10 working days available for settlement of the dispute through mediation, and the Project Mediator shall record that agreement in writing.

GC8.8.9 Settlement Agreement

- 1) The parties shall record in writing any settlement agreement reached, with sufficient detail to ensure a clear understanding of
 - (a) the issues resolved;
 - (b) any obligations assumed by each party including criteria to determine if and when these obligations have been met; and
 - (c) the consequences of failure to comply with the agreement reached.
- 2) The parties agree to carry out the terms of a settlement agreement as soon as possible and, in any event, within any time periods specified in the agreement.

GC8.8.10 Termination of Mediation

- 1) Either party may withdraw from mediation at any time without reason and, in that event, the Project Mediator shall give each party a written notice terminating the mediation and establishing the effective date of termination.
- 2) If, in the opinion of the Project Mediator, either party fails to mediate in good faith or fails to comply with the terms of these Rules, or if the Project Mediator, at any time during mediation, is of the opinion that further negotiations will fail to resolve the issues outstanding, the Project Mediator may terminate the negotiations by providing the parties with a written notice of termination, stating therein the Project Mediator's reasons for the termination, and the effective date of termination.

- 3) If a dispute has not been resolved within 10 working days or such other longer period as may have been agreed to by the parties, the Project Mediator shall terminate the mediation by giving written notice to the parties stating the effective date of termination.

GC8.8.11 Costs

- 1) The parties agree that they will each be responsible for the costs of their own representatives and advisors and associated travel and living expenses. Fees and expenses of the Project Mediator and all administrative costs of mediation, such as the cost of the meeting room(s), if any, shall be borne equally by the parties.

GC8.8.12 Subsequent Proceedings

- 1) The parties shall not rely on or introduce as evidence in any arbitral or judicial proceeding, whether or not such proceeding relates to the subject matter of mediation,
 - (a) any documents of other parties that are not otherwise producible in those proceedings;
 - (b) any views expressed or suggestions made by any party in respect of a possible settlement of issues;
 - (c) any admission made by any party in the course of mediation unless otherwise stipulated by the admitting party; and
 - (d) the fact that any party has indicated a willingness to make or accept a proposal or recommendation for settlement.
- 2) The Project Mediator shall neither represent nor testify on behalf of either of the parties in any subsequent investigation, action or proceeding relating to the issues in mediation proceedings.
- 3) The Project Mediator shall not be subpoenaed to give evidence relating to
 - (a) the Project Mediator's role in mediation; or
 - (b) the matters or issues in mediation;in any subsequent investigation, action or proceeding and the parties agree to vigorously oppose any effort to have the Mediator so subpoenaed.

GC9 CONTRACT SECURITY

- GC9.1 OBLIGATION TO PROVIDE CONTRACT SECURITY
GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY

GC9.1 OBLIGATION TO PROVIDE CONTRACT SECURITY

- 1) The Contractor shall, at the Contractor's expense and within 14 days after the date that the Contractor receives notice that the Contractor's bid was accepted by Canada, obtain and deliver Contract Security to Canada in one of the forms prescribed in GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY.
- 2) If the whole or a part of the Contract Security provided is in the form of a security deposit, it shall be held and disposed of in accordance with GC5.13 RETURN OF SECURITY DEPOSIT and GC7.4 SECURITY DEPOSIT - FORFEITURE OR RETURN.
- 3) If a part of the Contract Security provided is in the form of a labour and material payment bond, the Contractor shall post a copy of that bond at the site of the Work.
- 4) It is a condition precedent to the release of the first progress payment that the Contractor has provided the Contract Security as specified herein.

GC9.2 TYPES AND AMOUNTS OF CONTRACT SECURITY

- 1) The Contractor shall deliver to Canada either (a) or (b).
 - (a) A performance bond and a labour and material payment bond each in an amount that is equal to not less than 50 percent of the Contract Amount.
 - (b) A security deposit or an irrevocable standby letter of credit in an amount that is equal to not less than 20 percent of the Contract Amount.
- 2) A performance bond and a labour and material payment bond referred to in paragraph 1) of GC9.2 shall be in a form and be issued by a bonding or surety company that is approved by Canada.
 - (a) The approved form for the performance bond is displayed at the following Website:
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appS>
 - (b) The approved form for the labour and material payment bond is displayed at the following website: <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appS>
; and
 - (c) The list of approved bonding or surety companies is displayed at the following Website:
<http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494§ion=text#appl>
- 3) A security deposit referred to in subparagraph 1)(b) of GC9.2 shall be in the form of
 - (a) a bill of exchange, bank draft or money order made payable to the Receiver General for Canada and certified by an approved financial institution or drawn by an approved financial institution on itself; or

- (b) bonds of, or unconditionally guaranteed as to principal and interest by, the Government of Canada.
- 4) For the purposes of subparagraph 3)(a) of GC9.2
- (a) a bill of exchange is an unconditional order in writing signed by the Contractor and addressed to an approved financial institution, requiring the said institution to pay, on demand, at a fixed or determinable future time a sum certain of money to, or to the order of, the Receiver General for Canada;
 - (b) if a bill of exchange, bank draft or money order is certified by or drawn on an institution or corporation other than a chartered bank, it must be accompanied by proof that the said institution or corporation meets at least one of the criteria described in subparagraph 4)(c) of GC9.2, either by letter or by a stamped certification on the bill of exchange, bank draft or money; and
 - (c) An approved financial institution is
 - (i) a corporation or institution that is a member of the Canadian Payments Association as defined in the Canadian Payments Act;
 - (ii) a corporation that accepts deposits that are insured, to the maximum permitted by law, by the Canada Deposit Insurance Corporation or the "Autorité des marchés financiers";
 - (iii) a corporation that accepts deposits from the public if repayment of the deposit is guaranteed by Her Majesty the Queen in right of a province;
 - (iv) a corporation, association or federation incorporated or organized as a credit union or co-operative credit society that conforms to the requirements of a credit union which are more particularly described in paragraph 137(6) of the Income Tax Act; or
 - (v) Canada Post Corporation.
- 5) Bonds referred to in subparagraph 3)(b) of GC9.2 shall be provided on the basis of their market value current at the date of the Contract, and shall be
- (a) made payable to bearer; or
 - (b) accompanied by a duly executed instrument of transfer of the bonds to the Receiver General for Canada in the form prescribed by the Domestic Bonds of Canada Regulations; or
 - (c) registered as to principal, or as to principal and interest, in the name of the Receiver General for Canada pursuant to the Domestic Bonds of Canada Regulations.
- 6) An irrevocable standby letter of credit referred to in subparagraph 1)(b) of GC9.2 shall:
- (a) be an arrangement, however named or described, whereby a financial institution (the "Issuer") acting at the request and on the instructions of a customer (the "Applicant") or on its own behalf,
 - (i) is to make a payment to, or to the order of, Canada as the beneficiary;
 - (ii) is to accept and pay bills of exchange drawn by Canada;

- (iii) authorizes another financial institution to effect such payment or accept and pay such bills of exchange; or
 - (iv) authorizes another financial institution to negotiate against written demand(s) for payment provided that the terms and conditions of the letter of credit are complied with;
- (b) state the face amount that may be drawn against it;
 - (c) state its expiry date;
 - (d) provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by Canada;
 - (e) provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face value of the letter of credit;
 - (f) provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600. Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and
 - (g) be issued or confirmed, in either official language in a format left to the discretion of the issuer or confirmer, by an approved financial institution on its letterhead.

GC10 INSURANCE

GC10.1 INSURANCE CONTRACTS

GC10.2 INSURANCE PROCEEDS

GC10.1 INSURANCE CONTRACTS

- 1) The contractor shall, at the contractor's expense, obtain and maintain insurance contracts in respect of the work and shall provide evidence thereof to Canada in accordance with the requirements of the INSURANCE TERMS.
- 2) The insurance contracts referred to in paragraph 1) of GC10.1 shall
 - (a) be in a form, of the nature, in the amounts, for the periods and containing the terms and conditions specified in INSURANCE TERMS; and
 - (b) provide for the payment of claims under such insurance contracts in accordance with GC10.2 INSURANCE PROCEEDS.

GC10.2 INSURANCE PROCEEDS

- 1) In the case of a claim payable under a Builders Risk/Installation (All Risks) insurance contract maintained by the contractor pursuant to GC10.1 INSURANCE CONTRACTS, the proceeds of the claim shall be paid directly to Canada, and
 - (a) the monies so paid shall be held by Canada for the purposes of the contract, or
 - (b) if Canada elects, shall be retained by Canada, in which event they vest in Canada absolutely.
- 2) In the case of a claim payable under a General Liability insurance contract maintained by the contractor pursuant to GC10.1 INSURANCE CONTRACTS, the proceeds of the claim shall be paid by the insurer directly to the claimant.
- 3) If an election is made pursuant to paragraph 1) of GC10.2, Canada may cause an audit to be made of the accounts of the contractor and of Canada in respect of the part of the work that was lost, damaged or destroyed for the purpose of establishing the difference, if any, between
 - (a) the aggregate of the amount of the loss or damage suffered or sustained by Canada, including any costs incurred in respect of the clearing and cleaning of the work and its site and any other amount that is payable by the contractor to Canada under the contract, minus any monies retained pursuant to subparagraph 1)(b) of GC10.2; and
 - (b) the aggregate of the amounts payable by Canada to the contractor pursuant to the contract up to the date of the loss or damage.
- 4) A difference that is established pursuant to paragraph 3) of GC10.2 shall be paid forthwith by the party who is determined by the audit to be the debtor to the party who is determined by the audit to be the creditor.

- 5) When payment of a deficiency has been made pursuant to paragraph 4) of GC10.2, all rights and obligations of Canada and the contractor under the contract shall, with respect only to the part of the work that was the subject of the audit referred to in paragraph 3) of GC10.2, be deemed to have been expended and discharged.
- 6) If an election is not made pursuant to subparagraph 1)(b) of GC10.2, the contractor shall, subject to paragraph 7) of GC10.2, clear and clean the work and its site and restore and replace the part of the work that was lost, damaged or destroyed at the contractor's expense as if that part of the work had not yet been performed.
- 7) When the contractor clears and cleans the work and its site and restores and replaces the work referred to in paragraph 6) of GC10.2, Canada shall pay the contractor out of the monies referred to in paragraph 1) of GC10.2 so far as they will thereunto extend.
- 8) Subject to paragraph 7) of GC10.2, payment by Canada pursuant to paragraph 7) of GC10.2 shall be made in accordance with the contract but the amount of each payment shall be 100 percent of the amount claimed notwithstanding subparagraphs 3)(a) and 3)(b) of GC5.4 PROGRESS PAYMENT.



Appendix "B"

TECHNICAL SPECIFICATIONS & PLANS

Harrow Research Facility
Washroom Upgrades Phase B
Agriculture Agri-Food Canada

SPECIFICATION TITLE
SHEET

Section 00 00 00
Page 1
2015-10-21

PROJECT TITLE

HARROW RESEARCH FACILITY
WASHROOM UPGRADES PHASE B

PROJECT NUMBER

A614

PROJECT DATE

2015-10-21
Tender

PREPARED BY



GLOS ASSOCIATES INC.
3535 NORTH SERVICE ROAD EAST
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Client:
Agriculture and Agri-Food Canada
2001 Robert-Bourassa Blvd., Suite 671-L, Montreal Quebec, H3A 3N2

Location of Work:
Greenhouse and Processing Crops Research Centre
2585 County Road 20
Harrow, Ontario N0R 1G0

Consultant:
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Project Number 15070

These specification sections from Divisions 00 00 00 to 15 44 01 were prepared under the supervision of the following registered coordinating professionals:

ARCHITECTURAL	MECHANICAL
	

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A101	Men's Washroom 'C' Women's Washroom 'D' & H/C Washroom 'E' - Plans
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M101	Men's Washroom 'C' Women's Washroom 'D' & H/C Washroom 'E' - Plans

PART 1 - GENERAL

1 SUMMARY OF THE WORK

1.1 SECTION INCLUDES

.1 *Title and description of work:*

Client: **Agriculture Agri-Food Canada also referred to in this contract as "Owner"**

Project: **Harrow Research Facility
Washroom Upgrades - Phase B**

.2 *Contract Method:*
Stipulated Price Contract

.3 *Work by others:*
N/A

.4 *Future work:*
N/A

.5 *Work sequence:*
Construct Work in stages to accommodate the Owner's continued use of the existing adjacent premises during construction. Refer to drawings for phasing of the work of this contract.

.6 *Contractor use of premises:*
Contractor shall limit the use of the premises for Work, storage and for access to allow:
I. Owner occupancy
II. Work by other contractors
III. Public usage

.7 *Owner's occupancy:*
I. Owner will occupy various stipulated portions of the existing building and site during the entire construction period for execution of normal operations.
II. Cooperate with the Owner in scheduling operations to minimize conflict and to facilitate Owner usage.

.8 Permit and Inspection Fees:
Pay all fees for permits, certificates and inspections required by all Technical Authorities having jurisdiction related to the work of this contract.

.9 Owner furnished items:
N/A

.10 Work Restrictions:
I. Existing Services
Notify Owner and utility companies of intended interruption of services and obtain required permission. Where work involves breaking into or connecting to existing service, give the Owner 48 hours prior notice for necessary interruption of mechanical or electrical service throughout the course of the work. Keep the duration of interruptions to a minimum. Carry out interruptions after normal working hours of the occupants, preferably on weekends.

II. Other Projects
This Contractor shall be responsible to co-ordinate with other contractors on some sites where other projects are in progress or which will start during the time frame of this contract.

III. Special Requirements - Weekend Access
into Building

Contractors requesting to work within a building during a weekend or after regular hours will be accommodated. Contractors will be required to make arrangements with the Owner and any other contractors on site. This Contractor shall be responsible for keeping the building secure for such after hours periods.

2 PROJECT COORDINATION .1 Coordinate progress of the Work, progress schedules, submittals, use of site, temporary utilities, construction facilities and controls.

3 CUTTING AND PATCHING

3.1 - APPROVALS .1 Submit written request in advance of cutting or alteration which affects:
1. Structural integrity of any element of Project.
2. Integrity of weather-exposed or moisture resistant elements.
3. Efficiency, maintenance, or safety of any operational element.
4. Visual qualities of slight-exposed elements.
5. Work of Owner or separate contractor.

3.2 - INSPECTION .1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.
.2 After uncovering, inspect conditions affecting performance of the work.
.3 Beginning of cutting or patching means acceptance of existing conditions.

3.3 - EXECUTION .1 Perform cutting, fitting and patching including excavation and fill, to complete the Work.
.2 Remove and replace defective and non-conforming work.
.3 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical work.
.4 Perform work to avoid damage to other work.
.5 Prepare proper surfaces to receive patching and

finishing.

- .6 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.
- .7 Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.
- .8 Restore work with new products in accordance with Contract Documents.
- .9 Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- .10 At penetration of fire-rated wall, ceiling or floor construction, completely seal voids with fire-rated fire-resistant material, specified in Section 07 84 00, Fire Stopping, full thickness of construction element.
- .11 Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

4 PROJECT MEETINGS

4.1 ADMINISTRATIVE

- .1 Schedule and administer project progress meetings throughout progress of work at call of Consultant.
- .2 Distribute written notice of each meeting four days in advance of meeting date to Consultant.
- .3 Provide physical space and make arrangement for meetings.
- .4 Record minutes. Include significant proceedings and decisions. Identify 'action by' parties.
- .5 Reproduce and distribute copies of minutes

within three days after each meeting and transmit to meeting participants, affected parties not in attendance Consultant and Owner.

5 SUBMITTALS

- 5.1- ADMINISTRATIVE
- .1 Submit to the Consultant submittals listed for review. Submit with reasonable promptness and in an orderly sequence so as not cause delay in the Work.
 - .2 Work affected by submittals shall not proceed until review is complete.
 - .3 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.
 - .4 Verify field measurements and affected adjacent Work are coordinated.
- 5.2 - SHOP DRAWINGS AND PRODUCT DATA
- .1 "Shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of the Work.
 - .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connection, explanatory notes and other information necessary for completion of Work.
 - .3 Adjustments made on shop drawings by Consultant are not intended to change Contract Price.
 - .4 Make changes in shop drawing as Consultant may require.
 - .5 Submit 6 prints of shop drawings for each requirement requested in specification Sections and as Consultant may reasonably request.

- .6 Submit 6 copies of product data sheets or brochures for requirements requested in specification Sections and as Consultant may reasonably request where shop drawings will not be prepared due to standardized manufacture of product.

5.3 - SAMPLES

- .1 Submit for review, samples in duplicate as requested in respective specification Sections.
- .2 Deliver samples prepaid to Consultant's business address.

5.4 - JOB MOCK-UPS

- .1 Two weeks prior to Substantial Performance of the Work, submit to Consultant, 3 copies of operating and maintenance manuals.
- .2 Manuals to contain operational information on equipment, cleaning and lubrication schedules, filters, overhaul and adjustment schedules and similar maintenance information.
- .3 Bind contents in a three-ring, hard covered, plastic -jacketed binder. Organize contents into applicable categories of work, parallel to specifications Sections.

5.5 - RECORD DRAWINGS

- .1 After award of Contract, Consultant will provide a set of drawings for the purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Consultant.
- .2 Record locations of concealed components of mechanical and electrical services.
- .3 Identify drawings as "Project Record Copy". Maintain in new condition and make available for inspection on site by Consultant.
- .4 On completion of Work and prior to final inspection, submit record documents to Consultant.

- 5.6 - HEALTH AND SAFETY POLICY
- .1 Submit Health and Safety Policies in effect for the General Contractor.
 - .2 Submit Health and Safety Policies for all trade firms utilized on project.
 - .3 All policies must be submitted prior to start of construction.

6 SCHEDULE

- 6.1 CONSTRUCTION PERIOD
- .1 All work shall be completed on or before January 22, 2016, unless otherwise agreed to in writing with the Owner's Representative.
 - .2 The Contractor shall base his tender upon the construction period proposed. The Contractor shall state his starting and finishing dates. Otherwise, the Contractor shall state his proposed starting date, the number of weeks required to complete the work after receipt of Purchase Order.
 - .3 During the progress of the construction stage, should the Contractor's Schedule fall behind in regards to production activity in the event of delay of materials, strikes, walkouts and matters beyond reasonable control, the Contractor shall at such time notify verbally and in writing to the Owner's Representative requesting extension to completion deadline date. At such time, the Owner's Representative will review the matter of the problem in question and the new proposed completion deadline date for consideration of acceptance.

- 6.2 - SCHEDULES REQUIRED
- .1 Construction Progress Schedule
 - .2 Submittal schedule for Shop Drawings, Product Data and Samples.

- 6.3- FORMAT
- .1 Prepare schedule in form of horizontal bar chart.
 - .2 Provide separate bar for each trade or

operation.

- .3 Provide horizontal time scale identifying first work day of each week.
- .4 Format for listings: Chronological order of start of each item of work.

6.4 - SUBMISSION

- .1 Submit initial schedules within 10 days after award of Contract.
- .2 Submit one opaque reproduction, plus 2 copies to be retained by Owner.
- .3 Owner will review schedule and return reviewed copy within 5 days after receipt.
- .4 Resubmit finalized schedule within 5 days after return of reviewed copy.

7 QUALITY CONTROL

7.1 - INSPECTION

- .1 Owner and Consultant shall have access to Work.
- .3 Give timely notice requesting inspection if Work is designated for special test, inspections or approvals by Consultant instructions, or law of Place of the Work.
- .4 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

8 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

8.1 - INSTALLATION/REMOVAL

- .1 Provide construction facilities and temporary controls in order to execute work expeditiously.
- .2 Remove from site all such work after use.

8.2 - HOARDING

- .1 Erect hoarding where indicated on drawings and

as required to protect public, workers, public property and private property from injury or damage.

- .2 Provide hoarding with chain link fence 1.3m high, protecting public and private property from injury or damage. Provide lockable gates within hoarding for access to site by workers and vehicles.

8.3 - WEATHER
ENCLOSURES

- .1 Provide weather tight closures to unfinished door and window openings, tops of shafts and other openings in floors and roofs.
- .2 Close off floor areas where walls are not finished; seal off other openings; enclose building interior work area for temporary heat.

8.4 - CONTROL OF DUST
AND ORDOURS

- .1 Provide dust tight screens or partitions to localize dust generating activities, for protection of workers, finished areas of Work and public.
- .2 Maintain and relocate protection until such Work is complete.
- .3 Seal washroom door openings to the approval of the Board.
- .4 Provide negative air pressure in renovation spaces to prevent migration of dust and odours from work area to Owner's occupied spaces. If work space has no exterior window this contractor shall take special precautions to control migration of work place dust and odours.

8.5 -DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and site free from standing water.

8.6 - SITE
STORAGE/LOADING

- .1 Confine the Work and operations of employees to limits indicated by Contract Documents; limited to the work site; and as set out in the pre-construction meeting. Do not unreasonably encumber premises and products.

.2 Do not load or permit to be loaded any part of the Work with a weight or force that will endanger the Work.

.3 Contractor.

8.7 - SANITARY FACILITIES

.1 Existing stipulated facilities may be used during construction period.

.2 Maintain in clean condition.

8.8 - WATER SUPPLY

.1 Owner will provide a continuous supply of potable water for construction use.

8.9 - TEMPORARY HEATING

.1 Permanent heating system of building, or portions thereof, may be used when available. Be responsible for damage thereto.

8.10 - TEMPORARY POWER

.1 Owner will pay for temporary power required during construction for temporary lighting and operating of power tools, to maximum supply of 110 volts 15 amps.

.2 Arrange for connection with appropriate utility company. Pay costs for installation, maintenance and removal.

8.11 - TEMPORARY PHONE

.1 There is no requirement for a temporary telephone on behalf of the Owner or the Consultant.

8.12 - EQUIPMENT/TOOL/MATERIALS STORAGEE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work and Owner's activities.

8.13 - PROJECT CLEANLINESS

.1 Maintain the Work in tidy condition, free from accumulation of waste products and debris.

.2 Remove waste material and debris from site and deposit in waste container at end of each

working day.

- .3 Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

8.14 - SIGNS

- .1 No advertisements shall be displayed without the consent of the Board's representative.

9 MATERIAL AND EQUIPMENT

9.1 - PRODUCT AND MATERIAL QUALITY

- .1 Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective products will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.
- .3 Should any dispute arise as to quality or fitness of Products, decision rests strictly with Consultant based upon requirements of Contract.

9.2 - STORAGE, HANDLING AND PROTECTION

- .1 Handle and store Products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled Products in original undamaged condition with manufacturer's seals and labels intact.
- .3 Store products subject to damage from weather in weatherproof enclosures.

- 9.3 - MANUFACTURER'S INSTRUCTIONS
- .1 Unless otherwise indicated in specifications, install or erect Products in accordance with manufacturer's written instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
 - .2 Notify Owner in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.
 - .3 Improper installation of erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and reinstallation at no increase in Contract Price.

- 9.4 - WORKMANSHIP
- .1 Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.
 - .2 Do not employ any unfit person or any unskilled in their required duties.
 - .3 Decisions as to qualify or fitness of workmanship in cases of dispute rest solely with Consultant, whose decision is final.

- 9.5 - CONCEALMENT
- .1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
 - .2 Before installation, inform Consultant if there is a contradictory situation. Install as directed by Consultant.

10 PROJECT CLOSEOUT

- 10.1 - FINAL CLEANING
- .1 When the Work is Substantially Performed, remove surplus products, tools construction machinery and equipment not required for

performance of remaining Work.

- .2 Remove waste materials and debris from site at regularly scheduled times or dispose of as directed by Consultant. Do not burn waste materials on site, unless approved by Consultant.
- .3 Leave work broom clean before inspection process commences.
- .4 Clean and polish glass, mirrors, hardware, wall tile, stainless steel, chrome, porcelain enamel, baked enamel, plastic laminate, mechanical and electrical fixtures. Replace broken, scratched or disfigured glass.
- .5 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures, furniture fitments, walls, and ceilings.
- .6 Vacuum clean and dust building interiors, behind grilles, louvers and screens.
- .7 Wax, seal, shampoo or prepare floor finishes, as recommended by manufacturer.
- .8 Broom clean and wash exterior walks, steps and surfaces.
- .9 Remove dirt and other disfigurations from exterior surfaces.

10.2 - SYSTEMS
DEMONSTRATION

- .1 Prior to final inspection, demonstrate operation of each system to Owner and Consultant together.
- .2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.

10.3 - DOCUMENTS

- .1 Collect reviewed submittals and assemble

documents executed by Subcontractors, suppliers and manufacturers.

- .2 Submit material prior to final Application for Payment.
- .3 Submit operation and maintenance data, record (as-built) drawings in both hard copy and electronic format.
- .4 Provide warranties and bonds fully executed and notarized.
- .6 Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.
- .7 Owner will issue final change order reflecting approved adjustments to Contract Price not previously made.
- .8 Provide a summary of all trade contract information as well as warranty dates for each trade and system.

10.4 - INSPECTION/TAKE OVER PROCEDURE

- .1 Prior to application for certificate of Substantial Performance, carefully inspect the work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition of occupancy. Provide a verification report from Mechanical Contractor to ensure that all fixtures, fans and systems are working as designed and in accordance with the manufacturer's written documentation and Notify Consultant in writing, of satisfactory completion of the work and request an inspection.
- .2 During Owner's inspection, a list of deficiencies will be tabulated. Correct same.
- .3 When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been performed, make application for certificate of Substantial Performance. Refer to General Conditions for

specifics to application.

- .4 Upon completion of the project, the Owner's Representative and the Contractor will inspect all new work preparing an itemized list known as deficiencies. At such time, the Owner's Representative will itemize each deficiency noted with a dollar amount which will be held back until all work has been completed to the satisfaction of the Owner's Representative. In such deficiencies are prolonged due to lack of interest by the Contractor, the Owner will then tender all the unfinished items to outside Contractors, whatever cost is encountered to the Owner, the amount will be subtracted from the stipulated contract sum or the Owner will take over in completing the unfinished items using the specified holdback dollar amount, the amount will then be subtracted from the stipulated contract amount.

10.5 - CONSTRUCTION
LIEN ACT

- .1 Upon substantial completion of the project, the procedure for certification by the payment certifier (Owner) is only mandatory upon the application of the Contractor. If the General Contractor chooses not to make an application for Certificate of Substantial Performance then the lien period for the Contractor expires as stated in Section 31. (2 x b) of the Act.
- .2 The General Contractor will pay for any advertising required by the Construction Lien Act.

10.6 - EXTRA MATERIALS

- .1 Where required under this contract provide to the Owner additional materials in quantities stated. All such materials shall be in original packaging in new condition.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED.

END

PART 1 - GENERAL

1.1 DESCRIPTION

- .1 This specification covers the requirements for the furnishing of all labour, materials, tools, equipment, power, systems, transportation and supervision necessary to completely perform the work, as described in the drawings and the specifications.
- .2 The work includes, but is not necessarily confined to the following:
 - .1 Removal and disposal of all items in the designated washrooms noted for demolition on the drawings and specifications.
 - .2 Prepare floor slab for underground plumbing work.
 - .3 Supply and install new finishes to floors and walls as detailed and specified.
 - .4 Supply and install new ceiling finishes as detailed and specified.
 - .5 Installation of the new plumbing fixtures.
 - .6 Installation of new toilet partitions and all washroom accessories noted.
 - .7 Installation of electrical lighting fixtures and power items noted.
 - .8 Installation of all finish items within the washroom area as noted.

1.2 LOCATION OF THE WORK

- .1 The project is located at Agriculture and Agri-Foods Research Facility which is located in Harrow, Ontario.

1.3 ACCESS TO THE SITE

- .1 The Contractor will be given access to the Building through the designated service entrance. Prior to bringing equipment and material into the building, get approval of the Owner Representative who will arrange to avoid conflicts with the public or other users. At all times take care to void contact with other users.

1.3 ACCESS TO THE
SITE (cont'd)

- .2 Hours of operation of the Research Facility vary. Generally the Building is open at 7:00 a.m. and closing time is 5:00 p.m. Any times prior to or after shall be agreed upon by the Owner Representative.
- .3 Secure the work area in an approved manner. This includes hoarding/tarpping off the construction work area and staging area and prevent public access to any areas where construction activities occur. Hoarding installed must be free standing as not to disturb the existing building finishes.

1.4 FIRE SAFETY
REQUIREMENTS

- .1 Comply with the National Building Code of Canada (NBC - latest edition) for fire safety in safety in construction and the National Fire Code of Canada 2005 (NFC) for fire prevention, fire fighting and life safety in building use.
- .2 Comply with the following Human Resources and Social Development Canada (HRSDC), Fire Commissioner of Canada (FCC) standards DATE. These are available from HRSDC or may be downloaded from the internet at:
www.hrsdc.gc.ca.
 - .1 No. 301: Standard for Construction Operations.
 - .2 No. 302: Standard for Welding and Cutting.
 - .3 No. 374: Fire Protection Standard for General Storage (Indoor and Outdoor).
- .3 Welding and cutting:
 - .1 Assign a fire watcher as described in FC 302 when welding or cutting operations are carried out in areas where combustible materials are within 10 m may be ignited by conduction or radiation.

1.5 STANDARDS

- .1 Reference is made to CGSB, ASTM, CSA and other national standards. These standards when quoted form an integral part of the and

are to be read in conjunction with the specifications as if reproduced herein.

- 1.6 ABBREVIATIONS .1 Abbreviations used are:
- .1 CSA - Canadian Standards Association.
 - .2 NBC - National Building Code of Canada.
 - .3 CGSB - Canadian General Standards Board.
 - .4 CAN2, CAN3 - National Standards of Canada published by CGSB.
 - .5 PWGSC - Public Works and Government Services Canada.
- 1.7 PROTECTION OF THE WORK .1 Protect the work from damage by ice, water and/or other adverse climatic conditions.
- 1.8 CONTRACT DOCUMENTS .1 Drawings and specifications are complementary, items shown or mentioned in one and not in the other are deemed to be included in the contract work.
- 1.9 SCHEDULING OF THE WORK .1 The work must start as soon as practically possible after contract award and continue uninterrupted until completion. After the award of the contract a review meeting of the project schedule by the Contractor is provided for approval.
- .2 Provide within 10 working days after Contract award, schedule showing start date, dates for submission of shop drawings, material lists and samples, anticipated progress stages and date of final completion of work within time period required by Contract documents.
- .3 When schedule has been reviewed by the Owner Representative take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative. The activities which must be identified include the beginning and completion dates.
- 1.10 USE OF THE SITE FACILITIES .1 Execute work with least possible interference or disturbance to the normal use of the premises and visitor and staff

movement. Make arrangements with Departmental Representative to facilitate work as stated.

1.11 PROJECT MEETINGS .1

Administrative

- .1 Schedule and administer project meetings in orderly manner throughout the progress of the work.
 - .2 Prepare agenda for meetings.
 - .3 Notice of each meeting shall be given minimum 2 days in advance of meeting.
 - .4 Provide physical space and make arrangements for meetings.
 - .5 Preside at meetings.
 - .6 Record the minutes. Include significant proceedings and decisions. Indentify "action" by parties.
 - .7 Reproduce and distribute copies of minutes within 3 (three) days of each meeting and transmit to meeting participants and affected parties not in attendance.
 - .8 Representative of contractor, subcontractor and suppliers attending meetings shall be qualified and authorized to act on behalf of the party each represents.
- .2 Pre-Construction Meetings
- .1 Within 15 days after award of contract, arrange meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
 - .2 Senior representatives for the owner, consultant, sub-consultants, major sub-contractors, field inspectors and supervisors will be in attendance.
 - .3 Establish time and location of meeting and notify parties concerned minimum 5 days before meeting.
 - .4 Incorporate mutually agreed variations to contract documents into scope of work.
 - .5 Agenda to include the following;
- .3 Agenda to include the following;

- .1 Review, approval of minutes of previous meeting.
- .2 Review of work progress since previous meetings.
- .3 Field observations, problems, conflicts.
- .4 Problems which impede construction schedule.
- .5 Corrective measuring and procedures to regain project schedule.
- .7 Revision to construction schedule.
- .8 Progress, schedule, during succeeding work period.
- .9 Review submittal schedules; expedite as required.
- .10 Maintenance of quality standards.
- .11 Pending changes and substitutions.
- .12 Review of proposed changes for affect on construction schedule and on completion date.
- .13 Other business.

1.12 COST BREAKDOWN

- .1 To be determined by AAFC as noted on tender form.

PART 2 - PRODUCTS

2.1 ACCEPTANCE OF MATERIALS

- .1 Where materials and equipment are specified to CSA, CGSB, or similar standards, submit a written request to the Departmental Representative for approval of the relevant items.
- .2 Include with each request relevant test data bearing a recent date of test, manufacturer's details, and any other document which will substantiate its quality and conformance.
- .3 Cost of additional work and modifications to the design due to use of alternatives will be borne by the contractor.
- .4 Do not use materials or products in the work until written approval has been received from the Owner Representative.

-
- 2.2 SAMPLES .1 Submit non-returnable samples to the Departmental Representative prior to purchase or fabrication. Be responsible for samples and sampling. The Departmental Representative will be responsible for testing.
- 2.3 RECTIFICATION OF EXISTING SURFACES AND MATERIALS .1 Repair, replace and refinish, to the Owner Representative's approval, existing surfaces and items damaged in connection with the work, at the contractor's expense.
- .2 The repaired, replaced and refinished items to be at least equal to those that existed immediately before damage occurred.
- 2.4 SECURING WORK AREA .1 Secure the work areas in an approved manner. This includes wood framed hoarding to prevent public access to any areas where construction activities occur and construction materials are stored. Wood hoarding shall be self-supported.
- .2 A staging area in the visitors can be established. Staging area must be secured as above. Location to be approved by Owner Representative.
- 2.5 TEMPORARY FACILITIES .1 Provide and maintain suitable storage facilities, of type and location approved by the Owner Representative.
- .2 Observe and enforce all construction safety measures required by authorities having jurisdiction.
- .3 Provide and maintain all necessary enclosures, guards, guardrails, hoardings, barricades, warning signs and similar items.
- .4 Enclose the work and storage area as directed by the Owner Representative.
- 2.6 LAYOUT OF THE .1 Contractor will be responsible for layout

WORK work, and checking plan dimensions against field measurements.

- .2 Lay out the work according to the dimensions shown on the plans and verify in the field.
- .3 Notify the Owner Representative immediately of any discrepancies between field measurements and dimensions shown on plans.
- .4 Be responsible for rectification of errors resulting from failure to verify dimensions, elevations and other pertinent data shown on the plans.

PART 3 - EXECUTION

3.1 Not Used .1 Not used.

PART 1 - GENERAL

- 1.1 Administrative
- .1 This section specifies the general requirements and procedures for contractor's submissions of design calculations, design drawings, shop drawings, product data and samples to the Owner Representative for review. Additional specific requirements for submissions are specified in individual sections.
 - .2 Do not proceed with work affected by the submittal until review is complete.
 - .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
 - .4 Where items or information is not produced in SI Metric units converted values are acceptable.
 - .5 Notify Owner Representative, in writing at time of submission, indentifying deviations from requirements of the Contract Documents stating reasons for deviations.
 - .6 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Owner Representative review, unless Owner Representative gives written acceptance of specific deviations.
 - .7 Make any changes in submissions which Owner Representative may require consistent with contract documents and resubmit as directed by Owner Representative.
 - .8 Notify, Owner Representative in writing, when resubmitting, of any revisions other than those requested by Owner Representative.
- 1.2 Shop Drawings and Product Data
- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.
 - .2 Maximum sheet size: 850 x 1050 mm.
 - .3 Submit shop drawings as follows:

-
- .4 Cross-reference shop drawing information to applicable portions of contract documents. rk.
 - .5 Prepare shop drawings as noted in individual specification sections.
 - .6 Coordinate each submission with requirements of work and contract documents. Individual submissions will not be reviewed until all related information is available.
 - .7 Allow 10 days for Owner Representative's review of each submission.
 - .8 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
 - .9 Submissions include:
 - .1 Date and revision dates
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Sub-contractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Manufacturer
 - .4 Setting or erection details.
 - .5 Capacities.
 - .6 Performance characteristics.
 - .7 Standards.
 - .8 Relationship to adjacent work.
 - 1.2 Shop Drawings and Product Data .10 In addition for items designed by the Contractor's engineer should be signed and sealed

(Cont'd)

by that engineer who should have extensive experience in this type of work. Submissions should include design calculations relating to codes used and design sketches.

- .1 Design must be in accordance with Canadian Standards for the material being used. Design standards used. Design standards used should be listed on calculation sheets.
- .11 After Owner Representative's review, distribute copies.
- .12 Product Data: Manufacturer's catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
- .13 Submit 2 copies of product data.
- .14 Sheet size: 215 x 280 mm, maximum of 3 modules.
- .15 Delete information not applicable to project.
- .16 Supplement standard information to provide details applicable to project.
- .17 Cross-reference product data information to applicable portions of contract documents.
- .18 The review of shop drawings by Owner Representative Agriculture Agri Food Canada (AAFC) is for sole purpose of ascertaining conformance with general concept;
 - .1 This review shall not mean that AAFC approves detail design inherent in shop drawings, responsibility for which shall remain the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
 - .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.2 Shop Drawings
and Product Data
(cont'd)

1.3 Samples

- .1 Samples: examples of materials, equipment, quality, finishes, workmanship.
- .2 Where colour, pattern or texture is criterion, submit full range of samples.
- .3 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

PART 1 - GENERAL

- 1.1 GENERAL REQUIREMENTS
- .1 Comply with Ontario Health and Safety Act and with Canada Labour Code, Canada Occupational Safety and Health Regulations.
 - .2 Develop written site-specific Health and Safety Plan based on hazard assessment prior to commencing any site work and continue to implement, maintain, and enforce the plan until final demobilization from site. Health and Safety Plan must address project specifications.
 - .3 Relief from or substitutions for any portion or provision of minimum Health and Safety Guidelines specified herein or reviewed site-specific Health and Safety Plan must be submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.
- 1.2 REFERENCES
- .1 Canadian Standards Association (CSA)
 - .1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
 - .2 National Building Code 2005 (NBC):
 - .1 NBC 2005, Division B, Part 8 Safety Measures at Construction and Demolition Sites.
 - .3 National Fire Code 2005 (NFC):
 - .1 NFC 2005, Division B, Part 2 Emergency Planning, subsection 2.8.2 Fire Safety Plan.
 - .4 Province of Ontario.
 - .1 Occupational Health and Safety Act, Revised Statutes of Ontario 1990, Chapter 0.1 as amended, and Regulations for Construction Projects, O. Reg. 213/91 as amended.
 - .2 Workplace Safety and Insurance Act, 1997.
 - .3 Municipal statutes and authorities.

1.2 REFERENCES
(cont'd)

- .5 Fire Commissioner of Canada (FCC):
 - .1 FC-301 Standard for Construction Operations, June 1982.
 - .2 FC-302 Standard for Welding and Cutting 1982.
 - .3 The above standards can be viewed at the following website;
www.hrsdc.gc.ca/eng/labour/fire%5Fprotection/policies%5Fstandards/commissioner/. Copies may be obtained from: Human Resources and Social Development Canada Labour Program Fire Protection Engineering Services Ottawa, Ontario K1A 0J2.

1.3 Submittals

- .1 Submit site-specific Health and Safety Plan within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation found in work plan.
- .2 Submit Construction Safety Checklists after completion.
- .3 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .4 Submit copies of incident and accident reports.
- .5 Submit WHMIS MSDS - Material Safety Data Sheets to Departmental Representative.
- .6 Submit record of contractors health and safety meetings when requested.
- .7 Personnel training requirements including as follows:
 - .1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.

- 1.3 Submittals (cont'd) .8 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments within 7 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 7 days of receipt of comments from the Departmental Representative.
- .9 On-site Contingency and Emergency Response Plan: Address standard operating procedures to be implemented during emergency situations.
- 1.4 FILING OF NOTICE .1 File Notice of Project with Provincial authorities prior to beginning of work.
- 1.5 SAFETY ASSESSMENT .1 Perform site specific safety hazard assessment related to project.
- 1.6 MEETINGS .1 Schedule and administer Health and Safety meeting with Departmental Representative prior to commencement of work. Meeting to coincide with the pre-award meeting.
- 1.7 REGULATORY REQUIREMENTS .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- 1.8 RESPONSIBILITY .1 Be responsible for safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.
- .3 Where applicable the Contractor shall be designated "Constructor", as defined by Ontario Act.

- 1.9 Compliance Requirements
- .1 Comply with Ontario Health and Safety Act, with Canada Labour Code, Canada Occupational Safety and Health Regulations and Ontario regulations.
 - .2 Provide Departmental Representative with Material Safety Data Sheets (MSDS).
- 1.10 Unforeseen Hazards
- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during the performance of Work, immediately stop work and immediately advise Departmental Representative verbally and in writing.
 - .2 Follow procedures in place for Employees Right to Refuse Work as specified in the Act for the Province of Ontario.
- 1.11 Posting of Documents
- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative verbally and in writing.
 - .2 Provide documents as follows and post on site:
 - .1 Contractor's Safety Policy;
 - .2 Health and Safety Representative;
 - .3 General Requirements - Constructor's name;
 - .4 Workplace Safety and Insurance Board for Ontario - Poster 82C titled "In Case of Injury";
 - .5 Workplace Safety and Insurance Board for Ontario - Regulation 1101;
 - .6 Ministry of Labour Regulations for the Province of Ontario;
 - .7 Occupational Health and Safety Act for Province of Ontario;
 - .8 Material Safety Data Sheets;
 - .9 Safety Plan;
 - .10 Notice of Project;
 - .11 Joint Health and Safety Committee Members;
 - .3 Comply with Provincial general posting requirements.
- 1.12 CONSTRUCTION SAFETY CHECKLISTS
- .1 Review and implement out applicable health and safety checklists in collaboration with Departmental Representative.

- 1.13 CORRECTION OF NON-COMPLIANCE .1 Immediately address health and safety non-compliance issues Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.
- 1.14 BLASTING .1 Use of explosives is not permitted.
- 1.15 POWDER ACTUATED DEVICES .1 Use powder actuated devices only after receipt of written permission from Departmental Representative.
- 1.16 WORK STOPPAGE .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Assign responsibility and obligation to Health and Safety Officer to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations.
- 1.17 PROJECT/SITE CONDITIONS .1 The following are known or potential project related health, environmental and safety hazards at site which must be properly managed if encountered during course of work:
- .1 Existing Hazards on site:
- .1 Public present on site
 - .2 Working on/over/under water
 - .3 Working on/under/ice
 - .4 Potential for Marsh grass fire
 - .5 Oil Spills
 - .6 Creosote timber removal.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

PART 1 - GENERAL

- 1.1 Section Includes
- .1 Owner Representative will engage, as required, independent Inspection/testing Agencies for purpose of Quality Assurance only, that is, verify Contractor's Quality Control processes for timber, concrete, environmental protection, waste disposal, etc.
 - .2 Contractor is responsible for all Quality Control. Employment of inspection/testing agencies does not relax responsibility to perform work in accordance with Contract Documents.
- 1.2 ACCESS TO WORK
- .1 Allow Owner Representative access to work whenever and wherever it is in progress. Provide equipment required for access and executing inspection and testing by appointed agencies such as (but not limited to) ladders, lights.
 - .2 Co-operate to provide reasonable facilities for such access.
- 1.3 PROCEDURES
- .1 Notify Owner Representative in advance of requirement for tests.
 - .2 Submit samples and/or materials required for testing as listed in specifications. Submit with reasonable promptness and in orderly sequence to not cause delays in Work.
 - .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.
- 1.4 TESTING BY OWNER REPRESENTATIVE
- .1 Owner Representative will perform inspection/testing on a random basis for auditing purposes. Correct defect and irregularities as advised by Owner Representative at no cost. Pay costs for retesting and reinspection.
 - .2 If Contractor covers or permits to be covered

Work that has been designated for inspections before these are made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

- .3 Owner Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Owner Representative will authorize payment of the cost of examination and replacement.

1.5 REJECTED WORK

- .1 Remove defective Work, whenever is found, either through Contractor Quality Control procedures or through Owner Representative's Quality Assurance. Replace or re-execute in accordance with Contract Documents.
- .2 If in opinion of the Owner Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Owner Representative.

PART 2 - PRODUCTS

2.1 Not Used

- .1 Not Used.

PART 3 - EXECUTION

- .1 Not Used.

PART 1 - GENERAL

- 1.1 RECORD DRAWINGS
- .1 Owner Representative will provide two sets of white prints for record drawing purposes.
 - .2 Maintain project record drawings and record accurately deviations from Contract documents.
 - .3 Record change in red. Mark on set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to Owner Representative.
 - .4 Record following information:
 - .1 Depths of various elements of foundation in relations to Canadian Geodetic Datum.
 - .2 Maintain project record drawings and record accurately deviations from Contract Documents.
 - .3 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by Change Order or Field Order.

PART 2 - PRODUCTS

- 2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

- 3.1 Not Used .1 Not Used.

PART 1 - GENERAL

1.1 - REFERENCES

- .1 Canadian Standards Association (CSA)
 - .1 CSA S350-M1980, Code of Practice for Safety Demolition of Structures.
 - .2 Comply with National Building Code of Canada, Part 8, "Safety Measures at Construction and Demolition Sites". And Provincial Requirements.

1.2 - ASBESTOS AND DESIGNATED SUBSTANCES

- .1 Contractor to review designated substance report and take precautions to protect the environment.
- .2 Demolition of spray or trowel asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos not identified in Asbestos Manual be encountered, stop work and notify Consultant immediately. Do not proceed until written instructions have been received from Consultant.
- .3 The Owner's contractor shall remove any found asbestos in accordance with currently legislated removal procedures.
- .4 Do not proceed with work in the vicinity of found asbestos until the Owner has issued a written clearance to proceed.
- .5 Coordinate the efforts of the Asbestos Removal Contractor. Assist with the asbestos removal contractor's access asbestos by minimizing damage necessitated by investigation openings in the finishes, repair and finish as scheduled any damage caused by investigative openings.

1.3 - PROTECTION

- .1 Prevent movement, settlement, or other damage to adjacent structures, utilities, and parts of building

- .2 Keep noise, dust, and inconvenience to occupants to minimum.
- .3 Protect building systems, services and equipment.
- .4 Provide temporary dust screens, covers, railings, supports and other protection as required.

1.4 - SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements, 1.6 Submittals.
- .2 Before proceeding with demolition of load bearing, walls or of other walls requiring shoring, provide to authority having jurisdiction shoring and underpinning drawings prepared by qualified professional engineer registered or licensed in the Province of Ontario in Canada showing proposed method.

1.5 - NOTICE

- .1 Notify Consultant before disrupting building access or services.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 - DEMOLITION
SALVAGE AND DISPOSAL

- .1 General Contractor shall ensure that testing is carried out prior to saw-cutting or core-drilling of concrete floors to ensure that there are no conduits, pipes or cables that may be damaged. All costs to repair damage to utilities below the concrete slab shall be the sole responsibility of the General Contractor.
- .2 Remove parts of existing building to permit new construction. Sort materials into appropriate piles for recycling and or reuse.
- .3 Refer to demolition drawings and specification for items to be salvaged for reuse.

- .4 Remove items to be reused, store as directed by Consultant, and reinstall under appropriate section of specification.
- .5 Trim edges of partially demolished building elements to suit future use.
- .6 Dispose of removed materials, to appropriated recycling facilities or reuse facilities except where specified otherwise, in accordance with authority having jurisdiction.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS.1 Section 04 06 00 - Mortar and Masonry Grout
- .2 Section 04 08 00 -Masonry Reinforcing and Connectors
- .3 Section 04 09 00 - Masonry Accessories
- .4 Section 04 22 00 - Concrete Masonry Units
- .5 Section 07 90 00 - Joint Sealers
- 1.2 - REFERENCES .1 Canadian Standards Association (CSA)
- .1 CSA A179-94, Mortar and Grout for Unit Masonry
- .2 CSA-A371-94, Masonry Construction for Buildings
- 1.3 - SAMPLES .1 Submit samples in accordance with Section 01001 General Requirements.
- .2 Submit samples:
- .1 Two of each type of masonry unit specified.
- .2 One of each type of masonry accessory specified.
- .3 One of each type of masonry reinforcement, tie and connector proposed for use.
- .4 As required for testing purposes.
- 1.4 - TEST REPORTS .1 Submit laboratory test reports in accordance Section 01 00 10 General Requirements, Part 7, Submittals.
- .2 Submit laboratory test reports certifying compliance of masonry units and mortar ingredients with specification requirements.
- 1.5 - DELIVERY, STORAGE AND HANDLING .1 Deliver, store, handle and protect materials in accordance with Section 01001 General Requirements.

- .2 Deliver materials to job site in dry condition.
- .3 Keep materials dry until use.
- .4 Store under waterproof cover on pallets or plank platforms held off ground by means of plank or timber skids.

1.6 - WASTE MANAGEMENT
AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

1.7 - ENVIRONMENTAL
REQUIREMENTS

- .1 Hot weather requirements
 - .1 Protect freshly laid masonry from drying too rapidly, by means of waterproof, non-staining coverings.
 - .2 Keep masonry dry using waterproof, non-staining coverings that extend over walls and down sides sufficient to protect walls from wind driven rain, until masonry work is completed and protected by flashing or other permanent construction.
 - .3 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
 - .4 Provide temporary bracing of masonry work during and after erection until permanent lateral support is in place.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Masonry materials are specified in related Sections indicated in 1.1.

PART 3 - EXECUTION

3.1 - INSTALLATION

- .1 Do masonry work in accordance with CSA-A371 except where specified otherwise.
- .2 Build masonry plumb, level, and true to line, with vertical joints in alignment.

3.2 - CONSTRUCTION

.1 Exposed masonry

- .1 Remove chipped, cracked, and otherwise damaged units in exposed masonry and replace with undamaged units.

.2 Jointing

- .1 Allow joints to set just enough to remove excess water, then tool with round jointer to provide smooth, joints true to line, compressed, uniformly concave joints are indicated.

.3 Cutting

- .1 Cut out for electrical switches, outlet boxes, and other recessed or built-in objects.
- .2 Make cuts straight, clean, and free from uneven edges.

.4 Building-In

- .1 Build in items required to be built into masonry.
- .2 Prevent displacement of built-in items during construction. Check plumb, location and alignment frequently, as work progresses.
- .3 Brace door jambs to maintain plumb. Fill spaces between jambs and masonry with mortar.

.5 Support of loads

- .1 Use 25 MPa concrete where concrete fill is used in lieu of solid units.
- .2 Use grout to CSA A179 where grout is used in lieu of solid units.

.6 Provision for movement

- .1 Leave 3 mm space below shelf angles
- .2 Leave 6 mm space between top of non-load bearing walls and partitions and structural elements. Do not use wedges.
- .3 Built masonry to tie in with stabilizers, with provision for vertical movement.

.7 Loose steel lintels

.1 Install loose steel lintels. Centre over opening width.

.8 Control joints

.1 Construct continuous control joints as indicated.

.9 Expansion joints

.1 Build-in continuous expansion joints as indicated.

3.3 - SITE TOLERANCES .1 Tolerances in notes to Clause 5.3 of CSA-A371 apply.

3.4 - RE-INSTALLATION .1 Cut openings in existing work as indicated.
.2 Openings in walls to be approved by Consultant.
.3 Make good existing work. Use materials to match existing.

3.5 - FIELD QUALITY CONTROL .1 Inspection and testing will be carried out by Testing Laboratory designated by Consultant.

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS.1 Section 04 05 00 - Masonry Procedures

1.2 - REFERENCES .1 Canadian Standards Association (CSA)
.1 CSA A179-94, Mortar and Grout for Unit Masonry

1.3 - SAMPLES .1 Submit samples in accordance with Section 01001 General Requirements.
.2 Submit two full size samples of mortar.

1.4 - WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 - MATERIALS .1 Use same brands of materials and source of aggregate for entire project.
.2 Mortar and grout: CSA A179.
.3 Use aggregate passing 1.18 mm sieve where 6 mm thick joints are indicated.
.4 Colour: ground coloured natural aggregates for metallic oxide pigments.
.5 Mortar for interior masonry:
.6 Grout: to CSA A179, Table 3.
.7 Parging mortar: Type N to CSA A179.

2.2 - MIXES .1 Colour and admixtures: Mix grout to semi-fluid consistency.

- .2 Pointing mortar: Pre-hydrate pointing mortar by mixing ingredients dry, then mix again adding just enough water to produce damp unworkable mix that will retain its form when pressed into ball. Allow to stand for not less than 1 hour nor more than 2 hours then re-mix with sufficient water to produce mortar of proper consistency for pointing.

PART 3 - EXECUTION

3.1 - CONSTRUCTION

- .1 Do masonry work in accordance with CSA-A179 except where specified otherwise.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS.1 Section 04 06 00 - Mortar and Masonry Grout
- .2 Section 04 08 00- Masonry Reinforcing and Connectors
- .3 Section 04 09 00 - Masonry Accessories
- .4 Section 04 05 10 - Masonry Procedures
- .5 Section 04 22 00 - Concrete Masonry Units
- .6 Section 07 90 00 - Joint Sealers

1.2 - REFERENCES

- .1 Canadian Standards Association (CSA)
- .1 CSA A23.1-M94, Concrete Materials and Methods of Concrete Construction
- .2 CSA-A370-M94, Connectors for Masonry
- .3 CSA-A371-M94, Masonry Construction for Buildings
- .4 Withdrawn - Replaced by CSA G30.14-M1983 (R1998), Formed Steel Wire for Concrete Reinforcement
- .5 CSAG30.18-M92, Billet-Steel Bars for Concrete Reinforcement.
- .6 CSA-S304-.1M94, Masonry Design for Buildings
- .7 CSA W186-M1990, Welding of Reinforcing Bars in Reinforced Concrete Construction
- .8 CSA A179-94, Mortar and Grout for Unit Masonry

1.3 - SOURCE QUALITY CONTROL

- .1 Provide Consultant with certified copy of mill test report or reinforcement steel and connectors, showing physical and chemical analysis, minimum 5 weeks prior to commencing reinforcement work
- .2 Inform Consultant of proposed source of material to be supplied.

1.4 - SHOP DRAWINGS

- .1 Submit samples in accordance with Section 01 10 01 General Requirements, Part 7 Submittals.

- .2 Submit drawings consist of bar bending details, lists and placing drawings.
- .3 On placing drawings, indicate sizes, spacing, location and quantities of reinforcement and connectors.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Bar reinforcement: to CSA-A371 and CSA G30.18, Grade 400.
- .2 Wire reinforcement: to CSA-A371 and CSA G30.14, truss type.
- .3 Connectors: to CSA-A370 and CSA-S304.
- .4 Corrosion protection: to CSA-S304, galvanized to CSA-S304 and CSA-A370.

2.2 - FABRICATION

- .1 Fabricate reinforcing in accordance with CSA.A23.1 and Reinforcing Steel Manual of Practice by the Reinforcing Steel Institute of Ontario.
- .2 Fabricate connectors in accordance with CSA-A370.
- .3 Obtain Consultant's approval for locations of reinforcement splices other than shown on placing drawings.
- .4 Upon approval of Consultant, weld reinforcement in accordance with CSA W186.
- .5 Ship reinforcement and connectors, clearly identified in accordance with drawings.

PART 3 - EXECUTION

3.1 - GENERAL

- .1 Supply and install masonry connectors and reinforcement in accordance with CSA-A370, CSA-A371, CSA-A23.1 and CSA-S304.1 unless indicated otherwise.
- .2 Prior to placing mortar obtain Consultant's approval of placement of reinforcement and connectors.

- .3 Supply and install additional reinforcement to masonry as indicated.
- 3.2 - BONDING AND TYING .1 Bond walls of two or more withes using metal connectors in accordance with CSA-S304, CSA-A371 and as indicated.
- 3.3 - GROUTING .1 Grout masonry in accordance with CSA-S304.1, CSA-A371 and CSA-A179 and as indicated.
- 3.4 - ANCHORS .1 Supply and install metal anchors as indicated.
- 3.5 - LATERAL SUPPORT AND ANCHORAGE .1 Supply and install lateral support and anchorage in accordance with CSA-S304.1 and as indicated.
- 3.6 - MOVEMENT JOINTS .1 Reinforcement will not be continuous across movement joints except where indicated or authorized by Consultant.
- 3.7 - FIELD TOUCH-UP .1 Touch up damaged and cut ends of epoxy coated or galvanized reinforcement steel and connectors with compatible finish to provide continuous coating.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS .1 Section 04 08 00- Masonry Reinforcing and Connectors
- .2 Section 04 05 10 - Masonry Procedures

- 1.2 - REFERENCES .1 American Society for Testing and Materials (ASTM)
- .1 ASTM D 2240-97e1, Standard Test Method for Rubber Property - Durometer Hardness
- .2 Canadian Standards Association (CSA)
- .1 CSA-A371-M94, Masonry Construction for Buildings

- 1.3 - WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
- .2 Collect and separate plastic, paper packaging and corrugated cardboard.

PART 2 - PRODUCTS

- 2.1 - MATERIALS .1 Control joint filler: purpose-made elastomer durometer hardness to ASTM D 2240 of size and shape indicated.
- .2 Lap adhesive: recommended by masonry flashing manufacturer.
- .3 Mechanical Connectors: Hot dipped galvanized, two-piece adjustable, 48mm, wire, as manufactured by Dur-O-Wal.

PART 3 - EXECUTION

- 3.1 - GENERAL .1 Install continuous control joint fillers in control joints at locations indicated.
- .2 Install masonry mechanical fasteners every 400 mm vertically.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS.1 Section 04 05 10 - Masonry Procedures
- .2 Section 04 06 00 - Mortar and Masonry Grout
- .3 Section 04 08 00- Masonry Reinforcing and Connectors
- .4 Section 04 09 00 - Masonry Accessories
- 1.2 - REFERENCES .1 Canadian Standards Association (CSA International)
- .1 CAN3 A165 SERIES-94 (R2000), CSA Standards on Concrete Masonry Units covers: A165.1, A165.2, A165.3
- 1.3 - WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material for recycling.
- .4 Divert damaged or unused concrete materials from landfill to local facility approved by Consultant.

PART 2 - PRODUCTS

- 2.1 - MATERIALS .1 Standard concrete block units: to CAN3-A165 Series (CAN3-A165.1)
- .1 Classification: H/15/A/M
- .2 Size: modular
- .3 Special shapes: provide square units for exposed corners. Provide purpose-made shapes for lintels and bond beams. Provide additional special shapes as indicated.
- .2 Special fire resistant concrete block units: to CAN3-A165 Series (CAN3-A165.1) as modified below.
- .1 Classification: H/15/B/M except as modified by fire resistance requirements

specified below.

.2 Fire resistant characteristics: aggregate used in units and equivalent thickness of units to be Supplement to the National Building Code of Canada 1990, Chapter 2 for fire-resistance ratings indicated.

.3 Size: modular

.4 Special shapes: provide square bull-nosed units for exposed corners. Provide purpose-made shapes for lintels and provide additional special shapes as indicated.

PART 3 - EXECUTION

3.1 - INSTALLATION

.1 Concrete block units

- .1 Bond: running.
- .2 Coursing height: to match existing.
- .3 Jointing: concave where exposed or where paint or other finish coating is specified.
- .4 Clean block faces using soft cloths before mortar hardens rake to 10 mm depth. After completion of block laying fill joints with pointing mortar than point to provide concave joints. Repeat cleaning of faces.

.2 Concrete block lintels

- .1 Install reinforced concrete block lintels over openings in masonry where steel or reinforced concrete lintels are not indicated.
- .2 End bearing: not less than 200 mm.

3.2 - CLEANING

- .1 Standard block: Allow mortar droppings on masonry to partially dry then remove by means of trowel, followed by rubbing lightly with a small piece of block and finally by brushing.

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS .1 Section 10 16 00 - Metal Toilet Partitions

.2 Section 10 80 00 - Washroom Accessories

1.2 - REFERENCES

.1 Canadian Standards Association (CSA International)

.1 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples

.2 CAN/CSA-G164-M92 (R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.

.3 CSA O121-M1978 (R1998), Douglas Fir Plywood.

.4 CAN/CSA-O141-91 (R1999), Softwood Lumber

.5 CSA O151-M1978 (R1998), Canadian Softwood Plywood

.6 CAN/CSA-O325.0-92 (R1998), Construction Sheathing

.1 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber 2000.

1.3 - QUALITY ASSURANCE

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

.1 Plywood, OSB and wood based composite panel construction sheathing identification: by grade mark in accordance with CSA standards.

1.4 - WASTE MANAGEMENT

DISPOSAL

.1 Separate and recycle waste materials.

.2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard packaging material in appropriate on-site bins for recycling.

.4 Divert unused wood materials from landfill to recycling reuse facility approved by

Consultant.

- .5 Do not dispose of preservative treated wood through incineration.
- .6 Do not dispose of preservative treated wood with materials destined for recycling or reuse.
- .7 Dispose of treated wood, end pieces, wood scrapes and sawdust at sanitary landfill approved by Consultant.
- .8 Dispose of unused wood preservative material at official hazardous material collections site approved by Consultant.
- .9 Do not dispose of unused preservative material into sewer system, into streams, lakes, onto ground or in other locations where they will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 - LUMBER MATERIAL

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
 - .1 CAN/CSA-0141
 - .2 NLGA Standard Grading Rules for Canadian Lumber
- .2 Furring, blocking, nailing strips, grounds, rough bucks, curbs, fascia backing and sleepers:
 - .1 S2S is acceptable for concealed, non-structural elements
 - .2 Board sizes: "Standard" or better grade.
 - .3 Dimension sizes: "Standard" light framing or better grade
 - .4 Post and timbers sizes: "Standard" or better grade.

2.2 - PANEL MATERIALS

- .1 Douglas fir plywood (DFP): to CSA 0121, standard construction.
- .2 Canadian softwood plywood (CSP): to CSA 0151, standard construction.

- .3 Plywood, OSB and wood based composite panels: to CAN/CSA-0325.

2.3 - ACCESSORIES

- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by manufacturer.

2.4 - FINISHES

- .1 Galvanizing: to CAN/CSA-G164, use galvanized fasteners for exterior work interior high humid areas pressure- preservative treated lumber.

PART 3 - EXECUTION

3.1 - INSTALLATION

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .2 Install furring and blocking as required to space-out the support casework, cabinets, wall and ceiling finishes, facings and other work as required.
- .3 Align and plumb faces of furring and blocking to a tolerance of 1:600.
- .4 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

3.2 - ERECTION

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

3.3 - SCHEDULES

- .1 Provide electrical equipment backboards for mounting electrical equipment as indicated. Use 19 mm thick plywood on 19 x 38 mm furring around spacing, perimeter and at maximum 300mm intermediate.

- .2 Provide blocking and backing for secure fastening of items to gypsum board walls or ceiling of all types. Items include, but not limited to, Toilet Partitions and Screens; Washroom Accessories; Surface-Mounted Electrical, etc.

END

PART 1 - GENERAL

1.1 - SECTION INCLUDES .1 Interior and exterior frames.

1.2 - RELATED SECTIONS .1 Section 01 00 10 - General Requirements

.2 Section 06 10 10 - Rough Carpentry

.3 Section 09 91 10 - Interior Painting: Painting and finishing

1.3 - REFERENCES

.1 Canadian Standards Association (CSA)

.1 CAN/CSA-A247-M86 (R1996), Insulating Fibreboard

.2 CSA B111-1974 (R1998), Wire Nails, Spikes and Staples

.3 CAN/CSA-G164-M92 (R1998), Hot Dip Galvanizing of Irregularly Shaped Articles.

.4 CSA O121-M1978 (R1998), Douglas Fir Plywood.

.5 CAN/CSA-O141-91 (R1999), Softwood Lumber

.6 CSA O151-M78 (R1998), Canadian Softwood Plywood

.7 CSA-O153-M80 (R1998), Poplar Plywood

.2 National Lumber Grades Authority (NLGA)

.1 Standard Grading Rules for Canadian Lumber -2000.

.3 Underwriters Laboratories of Canada (ULC)

.1 CAN4-S104-80 (R1985), Fire Tests of Door Assemblies.

.2 CAN4-S105-85 (R1992), Fire Door Frames, meeting the Performance Required by CAN4-S104.

1.4 - SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.

.2 Indicate details of construction, profiles, jointing, fastening and other related details.

.3 Indicate materials, thicknesses, finishes and hardware.

- 1.5 - SAMPLES
- .1 Submit samples in accordance with Section 01 00 10 General Requirements.
 - .2 Submit duplicate samples: sample size 200 x 200 mm or 300 mm long unless specified otherwise of all materials.

- 1.6 - REGULATORY REQUIREMENTS
- .1 Wood fire rated frames and panels: listed and labeled by an organization accredited by Standards Council of Canada in conformance with CAN4-S104 and CAN4-S105 for ratings specified or indicated.

- 1.7 - DELIVERY, STORAGE AND HANDLING
- .1 Deliver, handle, store and protect materials in accordance with Section 01 00 10 General Requirements.
 - .2 Protect materials against dampness during delivery.
 - .3 Store materials in ventilated areas, protected from extreme changes of temperature or humidity.

PART 2 - PRODUCTS

- 2.1 - LUMBER MATERIAL
- .1 Lumber: unless specified otherwise, S4S, moisture content 19% or less in accordance with following standards:
 - .1 CAN/CSA-O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
 - .3 AWMAC premium grade, moisture content as specified.
 - .2 Machine stress-rated lumber is acceptable.
 - .3 Hardwood lumber: moisture content 7% or less in accordance with following standards:
 - .1 NLGA Standard Grading Rules for Canadian Lumber.
 - .2 AWMAC premium grade, moisture content as specified.

- 2.2 - PANEL MATERIALS
- .1 Douglas fir plywood (DFP): to CSA 0121, standard construction.
 - .2 Poplar plywood (PP): to CSA 153, standard construction.
- 2.3 - ACCESSORIES
- .1 Nails and staples: to CSA B111; galvanized to CAN/CSA-G164 for exterior work, interior humid areas and for treated lumber; plan finish elsewhere.
 - .2 Wood screws: electroplated, type and size to suite application.
 - .3 Splines: metal.
 - .4 Adhesive: recommended by manufacturer.
 - .5 Use least toxic sealants, adhesives, sealers, and finishes necessary to comply with requirement for this section.

PART 3 - EXECUTION

- 3.1 - INSTALLATION
- .1 Do finish carpentry to Quality Standards of the Architectural Woodwork Manufacturers Association of Canada (AWMAC), except where specified otherwise. Scribe and cut as required, fit to abutting walls, and surfaces, fit properly into recesses and to accommodate piping, columns, fixtures, outlets, or other projecting, intersecting or penetrating objects. Form joints to conceal shrinkage.

3.2 - CONSTRUCTION

- .1 Fastening
- .1 Position items of finished carpentry work accurately, level, plumb, true and fasten or anchor securely.
 - .2 Design and select fasteners to suite size and nature of components being jointed. Use proprietary devices as recommended by manufacturer.
 - .3 Set finishing nails to receive filler. Where screws are used to secure members countersink screw in round cleanly cut hole and plug with wood plug to match material being secured.

.4 Replace items of finish carpentry with damage to wood surfaces including hammer and other bruises.

.2 Interior and exterior frames

.1 Set frames with plumb sizes and level heads and secure.

.3 Hardware

.1 Install all hollow metal doors and wood doors.
.2 Install all finish hardware under Section 08710 Door Hardware as per manufacturer's written instructions.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS .1 Fire stopping and smoke seals within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) are specified in Division 15 and 16.
- 1.2 - REFERENCES .1 Underwriters Laboratories of Canada (ULC)
.1 ULC-S115-1995, Fire Tests of Fire-stop Systems
- 1.3 - SAMPLES .1 Submit samples in accordance with Section 01 00 10 General Requirements.
.2 Submit duplicate 300 x 300 mm samples showing actual fire stop material proposed for project.
- 1.4 - SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.
.2 Submit shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details should accurately reflect actual job conditions.
- 1.5 - PRODUCT DATA .1 Submit product data in accordance with Section 01 00 10 General Requirements.
.2 Submit manufacturer's product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site. Include manufacturer's printed instructions for installation.
- 1.6 - WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials.
.2 Collect and separate plastic, paper packaging and corrugated cardboard in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Fire stopping and smoke seal systems: in accordance with ULC-S115.
 - .1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of ULC-S115 and not to exceed opening sizes for which they are intended.
 - .2 Firestop system rating
 - 1 hours walls
 - 2 hours floors/ceilings
- .2 Service penetration assemblies: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No.40 U19.
- .3 Service penetration firestop components: certified by ULC in accordance with ULC-S115 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.
- .4 Fire-resistance rating of installed fire stopping assembly in accordance with NBC.
- .5 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.
- .6 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.
- .7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
- .8 Water (if applicable): potable, clean and free from injurious amounts of deleterious.
- .9 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.
- .10 Sealants for vertical joints: non-sagging.

PART 3 - EXECUTION

3.1 - PREPARATION

- .1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.
- .2 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.
- .4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 - INSTALLATION

- .1 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.
- .2 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.
- .3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .4 Tool or trowel exposed surfaces to a neat finish.
- .5 Remove excess compound promptly as work progresses and upon completion.

3.3 - INSPECTION

- .1 Notify Consultant when ready for inspection and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

3.4 - SCHEDULE

- .1 *Fire stop and smoke seal at:*

- .1 Penetrations through fire-resistance rated masonry, concrete, and gypsum board partitions and walls.
- .2 Top of fire-resistance rated masonry and gypsum board partitions.
- .3 Intersection of fire-resistance rated masonry and gypsum board partitions.
- .4 Control and sway joints in fire-resistance rated masonry and gypsum board partitions and walls.
- .5 Penetrations through fire-resistance rated floor slabs, ceilings and roofs.
- .6 Openings and sleeves installed for future use through fire separations.
- .7 Around mechanical and electrical assemblies penetrating fire separations.
- .8 Rigid ducts: greater than 129cm²: fire stopping to consist of bead of fire stopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separation.

3.5 - CLEAN UP

- .1 Remove excess materials and debris and clean adjacent surfaces immediately after application.
- .2 Remove temporary dams after initial set of fire stopping and smoke seal materials.

END

PART 1 - GENERAL

1.1 - REFERENCES

- .1 CAN/CGSB-19.13-M87, Sealing Compound ,
One-component, Elastomeric, Chemical Curing
- .2 CAN/CGSB-19.17-M90, One-Component Acrylic
Emulsion Base Sealing Compound.
- .3 CAN/CGSB-19.18-M87, Sealing Compound,
One-Component Silicone Base, Solvent Curing
- .4 CAN/CGSB-19.21-M87, Sealing and Bedding
Compound
- .5 CAN/CGSB-19.22-M89, Mildew Resistant, Sealing
Compound for Tubs and Tiles.

1.2 - SAMPLES

- .1 Submit samples in accordance with Section 01 10
01 General Requirements.
- .2 Submit duplicate samples of each type of
material and colour.

1.3 - MOCK-UP

- .1 Construct mock-up in accordance with Section 01
10 01 General Requirements.
- .2 Construct mock-up to show location, size, shape
and depth of joints complete work of back-up
material, primer, caulking and sealant.
Mock-up may be part of finished work.
- .3 Allow 24 hours for inspection of mock-up by
Consultant before proceeding with sealant work.

1.4 - DELIVERY, STORAGE
AND HANDLING

- .1 Deliver, handle, store and protect materials in
accordance with Section 01001 General
Requirements.
- .2 Deliver and store materials in original
wrappings and containers with manufacturer's
seals and labels, intact. Protect from
freezing, moisture, water and contact with
ground or floor.

1.5 - ENVIRONMENTAL AND SAFETY REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets acceptable to Labour Canada.
- .2 Conform to manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of sealants including special conditions governing use.
- .3 Ventilate area of work by use of approved portable supply and exhaust fans.

1.6 - WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Place materials defined as hazardous or toxic waste in designated containers.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .4 Dispose of surplus chemical and finishing materials in accordance with federal, provincial and municipal regulations.
- .5 Separate corrugated cardboard and place in designated areas for recycling.
- .6 Fold up metal banding, flatten, and place in designated area for recycling.
- .7 Use trigger operated nozzles for water hoses.
- .8 Return solvent and oil soaked rags for contaminated recovery and laundering or for proper disposal.
- .9 Use the least toxic sealants, adhesives, sealers, and finished necessary to comply with the requirements of this section.

- .10 Close and seal tightly all partly used sealant containers and store protected in well ventilated fire-safe area at moderate temperature.
- .11 Place used hazardous sealant tubes and other containers in areas designated for hazardous materials

PART 2 - PRODUCTS

2.1 - SEALANT MATERIALS .1 *Sealants and caulking compounds must:*

- .1 Meet or exceed all applicable governmental and industrial safety and performance standards; and
- .2 be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations including, for facilities located in Canada, the fisheries Act and the Canadian Environmental Act (CEPA)
- .3 Sealant and caulking compounds must not be formulated or manufactured with: aromatic solvents, fibrous talc or asbestos, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium, barium or their compounds, except barium sulfate.
- .4 Sealant and caulking compounds must not contain a total of volatile organic compounds (VOC's) in excess of 5% by weight as calculated from records of the amounts of constituents used to make the product.
- .5 Sealant and caulking compounds must be accompanied by detailed instructions for proper application so as to minimize health concerns and maximize performance, and information describing proper disposal methods.
- .6 Caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant shall not be used in air handling units.

- .7 When low toxicity caulks are not possible, confine usage to areas which off-gas to the exterior, are contained behind air barriers, or applied several months before occupancy to maximize off-gas time.
- .8 In the selection of products and materials of this section preference will be given to those with the following characteristics: Water based, non-flammable, low Volatile Organic Compound (VOC's) content, manufactured without compounds which contribute to ozone depletion in the upper atmosphere, does not contain methylene chloride, does not contain chlorinated hydrocarbons.
- .9 The manufacturing process must adhere to Lifecycle Assessment Standards as per CSA Z760-94 LCA Standards.

2.2 - SEALANT MATERIAL
DESIGNATION

- .1 Urethane One Part
 - .1 Non-Sag to CAN/CGSB-19.13, Type 2, MCG-2-25, colour selected by Consultant from manufacturer's full range of colours.
 - .2 Acceptable material: Tremco HPL Sealant of SirFlex 15LM or Consultant approved equal.
- .2 Silicones One Part
 - .1 To CAN/CGSB-19.13
 - .1 Acceptable material: paintable silicone sealant as manufactured by Dow Corning or Consultant approved equal.
 - .2 To CAN/CGSB-19.22 (Mildew resistant)
 - .1 Acceptable material: Sanitary 1700 as manufactured by G.E.C.,
- .3 Acrylics One Part
 - .1 To CGSB 19-GP-5M.
 - .2 Acceptable material: or Consultant approved equal.
- .4 Acrylics Latex One Part
 - .1 To CAN/CGSB-19.17
 - .2 Acceptable material: LePage Bulldog Grip PL Gapseal Crack and Gap Filler or Consultant approved equal.

.5 Acoustic Sealant

- .1 To CAN/CGSB-19.21
- .2 Acceptable material: LePage Bulldog Grip PL Gapseal Crack and Gap Filler or Consultant approved equal.

.6 Preformed Compressible and Non-Compressible back-up materials

- .1 Polyethylene, Urethane, Neoprene or Vinyl Foam
 - .1 Extruded closed cell foam backer rod.
 - .2 Size: oversize 30 to 50%
- .2 Bond Breaker Tape
 - .1 Polyethylene bond breaker tape which will not bond to sealant.

2.3 - SEALANT SELECTION

- .1 Seal interior perimeters of exterior openings as detailed on drawings: Sealant type: Acrylic Latex.
- .2 Control and expansion joints on the interior of exterior surfaces of unit masonry walls: Sealant type: Silicone Paintable.
- .3 Perimeters of interior frames, as detailed and itemized: Sealant type: Acrylic Latex
- .4 Interior masonry vertical control joints (block-to-block, block-to-concrete, and intersecting masonry walls): Sealant Type: Acrylic One Part.
- .5 Perimeter of bath fixtures (e.g. sinks, tubs, urinals, stools, water closets, basins, vanities): Sealant type: Sanitary.
- .6 Exposed interior control joints in drywall: Sealant type: Acrylic Latex.

2.4 - JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.
- .2 Primer: as recommended by manufacturer.

PART 3 - EXECUTION

- 3.1 - PROTECTION .1 Protect installed work of other trades from staining or contamination.
- 3.2 - PREPARATION OF JOINT SURFACES .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding jointing surfaces of harmful matter substances including dust, rust, oil, grease, and other matter which may impair work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.
- 3.3 - PRIMING .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant manufacturer's instructions immediately prior to caulking.
- 3.4 - BACKUP MATERIAL .1 Apply bond breaker tape where required to manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.
- 3.5 - MIXING .1 Mix materials in strict accordance with sealant manufacturer's instructions.
- 3.6 - APPLICATION .1 Sealant
- .1 Apply sealant in accordance with manufacturer's written instructions.

- .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
- .3 Apply sealant in continuous beads.
- .4 Apply sealant using gun with proper size nozzle.
- .5 Use sufficient pressure to fill voids and joints solid.
- .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
- .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
- .8 Remove excess compound promptly as work progresses and upon completion.

.2 Curing

- .1 Cure sealants in accordance with sealant manufacturer's instructions
- .2 Do not cover up sealants until proper curing has taken place.

.3 Cleanup

- .1 Clean adjacent surfaces immediately and leave work neat and clean.
- .2 Remove excess and droppings, using recommended cleaners as work progresses.
- .3 Remove masking tape after initial set of sealant.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS
- .1 Section 01 00 10 - General Requirements
 - .2 Section 07 90 00 - Joint Sealers
 - .3 Section 08 71 00 - Door Hardware
 - .4 Section 09 91 00 - Interior Painting

- 1.2 - REFERENCES
- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM A653/A653M-01a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.
 - .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.181-99, Ready-Mixed Organic Zinc-Rich Coating
 - .3 Canadian Standards Association (CSA International)
 - .1 G40.20/G40.21-98, General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel
 - .2 CSA W59-M1989 (R2001), Welded Steel Construction (Metal Arc Welding) (Metric Version)
 - .4 Canadian Steel Door Manufacturers' Association (CSDMA)
 - .1 CSDMA, Specifications for Commercial Steel Doors and Frames, 1990.
 - .2 CSDMA, Recommended Selection and Usage Guide for Commercial Steel Doors, 1990
 - .5 National Fire Protection Association (NFPA)
 - .1 NFPA 80-99, Standard for Fire Doors and Fire Windows
 - .2 NFPA 252-99, Standard Methods of Fire Tests of Door Assemblies

- .6 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN4-S104-80(R1985), Fire Tests of Door Assemblies
 - .2 CAN4-S105-85 (R1992), Fire Door Frames Meeting the Performance Required by CAN4-S104

1.3 - SHOP DRAWINGS

- .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements.
- .2 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware and fire rating and finishes.
- .3 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and fire rating finishes.
- .4 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.

1.4 - REQUIREMENTS

- .1 Steel fire rated doors and frames: labeled and listed by an organization accredited by Standards Council of Canada in conformance with CAN4-S104M NFPA 252 for ratings specified or indicated.
- .2 Provide fire labeled frame products for those openings requiring fire protection ratings as scheduled. Test products in strict conformance with CAN4-S104, ASTM E152 or NFPA 252 and list by nationally recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts

- .2 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.

2.2 - DOOR CORE MATERIALS

- .1 Honeycomb construction:
 - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5kg/m³ minimum sanded to required thickness
 - .2 Temperature rise rated (TRR): core composition to limit temperature rise on unexposed side of door 250C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, ASTM E152 or NFPA 252, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

2.3 - ADHESIVES

- .1 Honeycomb cores and steel components: heat resistant, spray grade, resin reinforced neoprene/rubber (polychloroprene) based, low viscosity, contact cement.
- .2 Polystyrene and polyurethane cores: heat resistant, epoxy resin based, low viscosity, contact cement.
- .3 Lock-seam doors: fire resistant, resin reinforced polychloroprene, highly viscosity sealant/adhesive.

2.4 - PRIMER

- .1 Touch-up prime CAN/CGSB-1.181.

2.5 - PAINT

- .1 Field paint steel doors and frames in accordance with Section 09 11 00 - Interior Painting, Protect weatherstrips from paint. Provide final finish shall be free from scratches or other blemishes.

2.6 - ACCESSORIES

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Interior top and bottom caps: steel

- .3 Metallic paste filler: to manufacturer's standard.
- .4 Fire labels: metal riveted
- .5 Sealant: Paintable Acrylic Sealant

2.7 - FRAMES
FABRICATION GENERAL

- .1 Fabricate frames in accordance with CSDMA specification.
- .2 Fabricate frames to profiles and maximum face sizes as indicated.
- .3 Interior frames: 1.6mm welded type construction.
- .4 Blank, reinforce, drill and tap for mortised, template hardware, using templates provided by finish hardware supplier. Reinforce frames for surface mounted hardware.
- .5 Protect mortised cutouts with steel guard boxes.
- .6 Prepare frame for door silencers, 3 for single door.
- .7 Manufacturer's nameplates on frames and screens are not permitted.
- .8 Conceal fastenings except where exposed fastening are indicated.
- .9 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.8 - FRAME ANCHORAGE

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.

- .4 Locate anchors for frames in existing openings not more than 150mm from top and bottom of each jambs and intermediate at 660mm o.c. maximum.

2.9 - FRAMES: WELDED
TYPE

- .1 Welding in accordance with CSA W59.
- .2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
- .3 Cope accurately and securely weld butt joints of mullions, transom bars, centre rails and sills.
- .4 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
- .5 Securely attach floor anchors to inside of each jamb profile.
- .6 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.
- .7 Fabricate frame products for oversized openings in sections, sizes to suite splice joints for field assembly.

2.10 - DOOR FABRICATION
GENERAL

- .1 Doors: swing type, flush, with provision for glass as indicated.
- .2 Fabricate doors with longitudinal edges welded. Seams: grind welded joints to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.
- .3 Blank, reinforce, drill doors and tap for mortised, template hardware.
- .4 Factory prepare holes 12.7 mm diameter and larger except mounting and through-bolt holes, on site, at time of hardware installation.
- .5 Reinforce doors where required, for surface mounted hardware. Provide inverted, recessed, spot welded channels to top and bottom of interior doors.

- .6 Provide factory applied touch-up primer at areas where zinc coating has been removed during construction.
- .7 Provide fire labeled doors for those openings requiring fire protection ratings, as scheduled. Test such products in strict conformance with CANS-S104, ASTM E152, NFPA 252 and list by national recognized agency having factory inspection service and construct as detailed in Follow-Up Service Procedures/Factory Inspection Manuals issued by listing agency to individual manufacturers.
- .8 Manufacturer's nameplates are permitted on hinge edge of door.

2.11- DOORS: HONEYCOMB CORE CONSTRUCTION

- .1 Form each face sheet for interior doors from 1.6 sheet steel with honeycomb temperature rise rated core laminated under pressure to face sheets.

2.12 - HOLLOW STEEL CONSTRUCTION

- .1 Form each face sheet for interior doors from 1.6 sheet steel.
- .2 Fill voids between stiffeners of interior doors with temperature rise rated core.

PART 3 - EXECUTION

3.1 - INSTALLATION GENERAL

- .1 Install labeled steel fire rated doors and frames to NFPA 80 except where specified otherwise.
- .2 Install doors and frames to CSDMA Installation Guide.

3.2 - FRAME INSTALLATION

- .1 Set frames plumb, square, level and at correct elevation.
- .2 Set anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over

1200mm wide. Remove temporary spreaders after frames are built-in.

- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .5 Caulk perimeter of frames between frame and adjacent material.

3.3 - DOOR INSTALLATION

- .1 Install doors and hardware in accordance with hardware templates and manufacturer's instructions in Section 08 71 00-Door Hardware.
- .2 Provide even margins between door and jambs and doors and finished floor and thresholds as follows:
 - .1 Hinge side: 1.0 mm.
 - .2 Latchside and head: 1.5 mm.
 - .3 Adjust operable parts for correct function

3.4 - FINISH REPAIRS

- .1 Touch up with primer finishes damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS .1 Section 06 20 00 - Finish Carpentry

.2 Section 08 11 00 - Steel Doors and Frames

1.2 - REFERENCES

.1 Standard hardware location dimensions in accordance with Canadian Metric Guide for steel Doors (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturers' Association.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-69.17-M86, Bored and Preassembled Locks and Latches.

.2 CAN/CGSB-69.18-M90 /ANSI/BHMA A156.1-1981, Butts and Hinges.

.3 CAN/CGSB-69.20-M90 /ANSI/BHMA A156.4-1986, Door Controls (Closers)

.4 CAN/CGSB-69.21-M90 /ANSI/BHMA A156.5-1984, Auxiliary Locks and Associates Products

.5 CAN/CGSB-69.29-M93 /ANSI/BHMA A156.13-1980, Mortise Locks and Latches

.6 CAN/CGSB-69.31-M89 /ANSI/BHMA A156.15-1981, Closer/Holder Release Device.

.7 CAN/CGSB-69.32-M90 /ANSI/BHMA A156.16-1981, Auxiliary Hardware.

.8 CAN/CGSB-69.34-93 /ANSI/BHMA A156.18-1984, Materials and Finishes.

1.3 - REQUIREMENTS
REGULATORY AGENCIES

.1 Hardware for doors in fire separations and exit doors certified by a Canadian Organization accredited by Standards Council of Canada.

1.4 - SAMPLES

.1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.

.2 Identify each sample by label indicating applicable specification paragraph number, brand name and number, finish and hardware package number.

.3 After approval samples will be returned for incorporation in the work.

- 1.5 - HARDWARE LIST
- .1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.
 - .2 Indicate specified hardware, including make, model, material, function, size, finish and other pertinent information.

- 1.6 - CLOSEOUT SUBMITTALS
- .1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 10 00 General Requirements.
 - .2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

- 1.7 - DELIVERY AND STORAGE
- .1 Deliver, store, handle and protect materials in accordance with Section 01 00 10 General Requirements.
 - .2 Store finishing hardware in locked, clean and dry area.
 - .3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

- 1.8 - WASTE DISPOSAL AND MANAGEMENT
- .1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.
 - .2 Dispose of all corrugated polystyrene plastic packaging material in appropriate on-site bin for recycling.

PART 2 - PRODUCTS

- 2.1 - HARDWARE ITEMS
- .1 Only door locksets and latchsets listed on CGSB Qualified Products List are acceptable for use on this project.
 - .2 Use one manufacturer's products only for all similar items available in all materials and finishes, consult product catalogues for availability.

- 2.2 - DOOR HARDWARE
- .1 Butts and hinges: Hager or Consultant approved equal.
 - .2 Door Closers and Accessories: LCN.

- 2.3 - FASTENINGS
- .1 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.
 - .2 Exposed fastening devices to match finish of hardware.
 - .3 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.
 - .4 Use fasteners compatible with material through which they pass.

PART 3 - EXECUTION

- 3.1 - INSTALLATION INSTRUCTIONS
- .1 Furnish wood door and metal frame manufacturers with complete instructions and templates for preparation of their work to receive hardware.
 - .2 Furnish manufacturers' instructions for proper installation of each hardware component.
 - .3 Install hardware to standard hardware location dimensions in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel door and Frame Manufacturers' Association.
 - .4 Where door stop contact door pulls, mount stop to strike bottom of pull.

- 3.2 - HARDWARE SCHEDULE
- .1 The following applies to an individual door.
03 EA Hinges - Hager BB1168 x NRP (size to match existing template frame opening) Finish: Steel.
01 EA Door Closer - LCN 1460 x EDA x CTB Note

no alternatives accepted. Finish: Powdercoat

01 EA Door Closer - LCN 4810. Finish: powder coat.

01 EA Push Plate - CBH 920 4" x 16" .125. Finish: Aluminum.

01 EA Door Pull - CBH 7430. Finish Aluminum.

01 Kick Plates - CBH900 100 10" x 34" x .050. Finish: aluminum, standard gauge 0.50.

01 EA Floor Stop - CBH 101. Finish: aluminum

2-8310-856 Wall mounted actuation with surface mounted box 8310 or 868S with surface kit 8310-3856 with receiver - noted all equipment to be supplied to ensure actuator is optional.

Notes: Kick Plates
34" is for a 36" wide door

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS .1 Section 06 20 00 - Finish Carpentry

.2 Section 09 25 00 - Gypsum Board

1.2 - REFERENCES

.1 ASTM C 645-99, Standard Specification for Nonstructural Steel Framing Members.

.2 ASTM C 754 98a, Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

.3 CAN/CGSB-1.40-97, Primer, Structural Steel, Oil Alkyd Type.

.4 CAN/CGSB-19.21 M87, Sealing and Bedding Compound Acoustical.

1.3 - WASTE MANAGEMENT AND DISPOSAL

.1 Divert steel scraps from landfill by disposal at nearest metal recycling facility.

.2 Divert reusable materials for reuse at nearest used building materials facility or similar type facility.

.3 Divert unused primer materials from landfill through disposal at a special waste depot.

PART 2 - PRODUCTS

2.1 - MATERIALS

.1 Non-load bearing channel stud framing: to ASTM C 645, 92mm stud size, roll formed form 0.53 and 0.91 mm thickness to suit wall height hot dipped galvanized steel sheet, for screw attachments of gypsum board. Knock-out service holes at 460mm centres.

.2 Floor and ceiling tracks: to ASTM C 645, in widths to suite stud sizes, 32mm flange height.

.1 Floor track: snap-in type formed to hold studs securely in place at 50 mm intervals; fabricated from 0.5 mm thick steel sheet; size to suit studs.

.2 Ceiling track: channel shaped track for use with stud shoes and 1.2mm diameter double wire ties; size to suite studs.

- .3 After fabrication apply one shop coat of CAN/CGSB-1.40 primer to steel surfaces. Descale and clean surfaces before painting.
- .3 Metal channel stiffener: 25 x 50 mm size, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: to CAN/CGSB-19.21.
- .5 Insulating strip: rubberized, moisture resistant 3mm thick foam strip, 12 mm wide, with self sticking adhesive on one face, lengths as required.

PART 3 - EXECUTION

3.1 - ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 600 mm o.c. maximum.
- .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.
- .3 Place studs vertically at 400 mm o.c. and not more than 50 mm abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Attach studs to bottom and ceiling track using crimp method.
- .6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.

- .8 Provide two studs extending from floor to ceiling at each side openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .9 Provide two heavy gauge double studs at each arm of plumbing fixture carriers. Secure studs together and to arm of the carrier.
- .10 Install heavy gauge double jamb studs at openings and exterior corners.
- .11 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .12 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .13 Provide 40 mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partition.
- .14 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .15 Extend partitions to ceiling height except where noted otherwise on drawings.
- .16 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs. Use double track slip joint as indicated

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.17 Install continuous insulating strips to isolate studs from uninsulated surfaces.

END

PART 1 - GENERAL

1.1 - REFERENCES

Aluminum Association

- .1 Designation for Aluminum Finishes -1997.

American Society for Testing and Materials (ASTM)

- .1 ASTM C 36-95, Specification for Gypsum Wallboard.
- .2 ASTM C442-92, Specification for Gypsum Backing Board and Coreboard.
- .3 ASTM C475-94, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- .4 ASTM C514-94, Specification for Nails for the Application of Gypsum Board.
- .5 ASTM C630-93, Specification for Water-Resistant Gypsum Backing Board.
- .6 ASTM C840-95, Specification for Application and Finishing of Gypsum Board.
- .7 ASTM C954-93, Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.
- .8 ASTM C1002-93, Specification for Steel Drill Screws for the Application of Gypsum Board.
- .9 ASTM C1047-94, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .10 ASTM C1280-94, Specification for Application of Gypsum Sheathing Board.
- .11 ASTM C1178-93, Specification for Glass Mat Water-Resistant Gypsum Backing Board.
- .12 ASTM D 3273 Mold Resistant.
- .13 ASTM D 4060 Abrasion Resistance Test.
- .14 ASTM D 5420 Surface Indentation Tests.
- .15 ASTM 695 Soft Body Impact Test.

Canadian General Standards Board (CGSB)

- .1 CAN/CGSB-51.34-M86, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .2 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.

Underwriters Laboratories of Canada (ULC)

- .1 CAN/ULC-S102-1988, Building Materials and Assemblies, Standard Method of Test for Surface Burning Characteristics of.

1.2 - SITE
ENVIRONMENTAL
REQUIREMENTS

- .1 Maintain temperature minimum 10°C, maximum 21°C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Gypsum board: to ASTM CMTT and ASTM C630, DensArmor Plus as manufactured by Georgia Pacific Corporation, ½" thick 48" wide x maximum practical length.
- .2 Tile Backer Board: To ASTM D 3273
 - .1 Acceptable Products: ½" Dens Armor Plus interior wallboard as manufactured by Georgia Pacific Corporation.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors.
- .4 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .5 Resilient clips drywall furring: 0.5mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .6 Steel drill screws: to ASTM C 1002.
- .7 Stud adhesive: to CAN/CGSB-74.25 ASTM C 557.
- .8 Laminating compound: as recommended by manufacturer, asbestos-free.
- .9 Casing beads, corner bead, control joints and edge trim: to ASTM C 1047, meal zinc-coated by electrolytic process, 0.5mm base thickness, perforated flanges, one piece length per location.

- .10 Sealants: in accordance with Section 07 90 00 Joint Sealers.
- .11 Acoustic sealant: Tremco.
- .12 Insulating strip: rubberized, moisture resistant, 3mm thick closed cell neoprene strip, 12 mm wide, with self-sticking permanent adhesive on one face, lengths as required.
- .13 Joint compound: to ASTM C 175, asbestos free.
- .14 Tile Backer Panel Adhesive: Thin set grout as manufactured by TEC.

PART 3 - EXECUTION

3.1 - ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- .2 Do application of in accordance with ASTM C 1280.
- .3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with ASTM C 840 except where specified otherwise.
- .4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .5 Install work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles, and other ceiling penetration.
- .7 Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .8 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.

- .9 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.
- .10 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840, except where specified otherwise.
- .11 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring to reveals. Check clearances with equipment suppliers.
- .12 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .13 Tile backer adhesive on to existing, prepared substrate using a notched trowel sited in accordance with manufacturer's written instructions. Apply material to provide fully adhered application. Mechanically fasten.

3.2 - APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, electrical and mechanical work are approved.
- .2 Apply single layer gypsum board to metal furring or framing using screw fasteners stud adhesive for first layer, laminating adhesive screw fasteners for second layer. Maximum spacing of screws 300 mm oc.
- .3 Apply single layer gypsum board to concrete block surfaces, where indicated, using appropriate laminating adhesive.
- .4 Apply water-resistant gypsum board. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fasten heads.
- .5 Apply board using stud adhesive on furring and framing.

3.3 - INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm oc using contact adhesive for full length.
- .2 Install casing beads around perimeter of suspended ceiling.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .5 Construct control joints of two back-to-back casing beads set in gypsum board facing and supported independently on both side of joint.
- .6 Provide continuous polyethylene dust barrier behind and across control joints.
- .7 Locate control joints at changes in substrate construction and at approximate 15 m spacing on ceilings.
- .8 Install control joints straight and true.
- .9 Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous dust barrier.
- .10 Install expansion joint straight and true.
- .11 Splice corners and intersections together and secure to each member with 3 screws.

- .12 Install access doors to electrical and mechanical fixtures specified in respective Sections
 - .1 Rigidly secure frames to furring or framing systems.
- .13 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to manufacturer's directions and feathered out onto panel faces.
- .14 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .15 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .16 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .17 Completed installation to be smooth, level or plumb, free from waves and other defects.
- .18 Mix joint compound slightly thinner than for joint taping.
- .19 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .20 Allow skim coat to dry completely.
- .21 Remove ridges by light sanding or wiping with damp cloth.

END

PART 1 - GENERAL

1.1 - REFERENCE
STANDARDS

- .1 Do tile work in accordance with Installation Manual 200-1979, "Ceramic Tile", produced by Terrazzo Tile and Marble Association of Canada (TTMAC), except where specified otherwise.

1.2 - SAMPLES

- .1 Submit shop drawings in accordance with Section 01 10 00 General Requirements.
- .2 Submit duplicate 340 x 340 mm sample panels of each colour, texture, size and pattern of tile.
- .3 Adhere tile samples to 11mm thick plywood and grout joints to represent project installation.

1.3 - ENVIRONMENTAL
CONDITIONS

- .1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12°C for 48 h before, during, and 48 h after, installation.

1.4 - EXTRA MATERIALS

- .1 Provide extra materials of floor and wall tile in accordance with Section 01 00 10 General Requirements.
- .2 Provide extra floor and wall tile amounting to 2% of the products on this project in each colour and type.
- .3 Extra material shall be from the same product run as installed materials.
- .4 Clearly identify each type, pattern and colour.
- .5 Deliver to the Owner's Representatives designated location upon completion of the work of this section.
- .6 Obtain a written receipt for the delivery of these extra materials.

1.5 - CLOSEOUT
SUBMITTALS

- .1 Provide operation and maintenance data for door closers, locksets, door holders and fire exit hardware for incorporation into manual specified in Section 01 00 10 General Requirements.

.2 Brief maintenance staff regarding proper care, cleaning, and general maintenance.

1.6 - DELIVERY AND STORAGE

.1 Deliver, store, handle and protect materials in accordance with Section 01 00 10 General Requirements.

.2 Store finishing hardware in locked, clean and dry area.

.3 Package each item of hardware including fastenings, separately or in like groups of hardware, label each package as to item definition and location.

1.7 - WASTE DISPOSAL AND MANAGEMENT

.1 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.2 Dispose of all corrugated polystyrene plastic packaging material in appropriate on-site bin for recycling.

PART 2 - PRODUCTS

2.1 - FLOOR TILE

.1 Porcelain Tile: to match Phase A Tile
Colour: To match Phase A tiles.

2.2 - WALL TILE

.1 Wall Tile:
Type 'A' To match Phase A Tile
Type 'B' To match Phase A tile

2.3 - WALL BASE TILE

.1 Floor tile cut to suite required base height.

2.4 - MORTAR AND ADHESIVE MATERIALS

.1 Keralastic Additives as manufactured by Mapei.

.2 Thin set system grout: by TEC.

2.5 - GROUT

.1 Grout preparation to manufacturers instructions.

.2 Colour to be selected by Consultant.

2.6 - ACCESSORIES

.1 Threshold: Aluminum, beveled one side, satin lowest available slope finish to exposed

surfaces, size to suite door opening and frame width and adjacent changes in floor finishes. Acceptable material "Reno-Ramp" as manufactured by Schluter Systems.

- .2 Sealant in accordance with Section 07 90 00 - Sealants, colour selected by Consultant.
- .3 Floor sealer and protective coating to tile and grout manufacturers recommendations.
- .4 Wall Tile PVC trim where indicated to be "Rodec" as manufactured by Schluter Systems sizes to suite tile and adhesive combined thickness. Colour to be selected by Consultant from full range of colour. Provide outside matching corner pieces complete with manufactured junction pieces.
- .5 Grout Release to porcelain tile and grout manufacturer's written recommendations.

2.7 - MORTAR AND
ADHESIVE MIXES

- .1 Dry set mortar mix to manufacturer's written instructions.

PART 3 - EXECUTION

3.1 - WORKMANSHIP

- .1 Remove existing floor finishes.
- .2 Apply tile or backing coats to clean and sound surfaces in accordance with tile adhesive manufacturers' written instructions.
- .3 Fit tile around corners, fitments, fixtures, drawings and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.
- .4 Maximum surface tolerance 1:800.
- .5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation.
- .6 Lay out tiles so perimeter tiles are minimum ½ size.

- .7 Sound tiles after setting and replace - sounding units to obtain full bond.
- .8 Make internal angles square.
- .9 Install threshold strips and junction of tile flooring and dissimilar materials.
- .10 Clean installed tile surfaces after installation and grouting cured.

3.2 - FLOOR TILE

- .1 Install in accordance with TTMAC details.

3.3 - WALL BASE TILE

- .1 Install trim caps level and straight with butt joints flush. Inside and outside corners shall be mitred with a power mitre saw.
- .2 Install in accordance with TTMAC details.
- .3 Install cut tile edge down toward top edge of wall base. Shall be manufactured edge.

3.4 - WALL TILE

- .1 Install in accordance with TTMAC details.

3.5 - FLOOR SEALER AND PROTECTIVE COATING

- .1 Apply in accordance with manufacturer's instructions.

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS .1 Section 01 00 10 General Requirements.

1.2 - REFERENCES

American Society for Testing and Materials (ASTM)
.1 ASTM E1264-98, Classification for Acoustical Ceiling Products.

Canadian General Standards Board (CGSB)
.1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.

Canadian Standards Association (CSA)
.1 CSA B111-74 (R1998), Wire Nails, Spikes and Staples.

Underwriters Laboratories of Canada (ULC)
.1 CAN/ULC-S102-88 (R2000), Surface Burning Characteristics of Building Materials

1.3 - SAMPLES

.1 Submit samples in accordance with Section 01001 General Requirements.

.2 Submit duplicate full size samples of each type acoustical units.

1.4 - REGULATORY REQUIREMENTS

.1 Fire-resistance rated floor/ceiling and roof/ceiling assembly: certified by a Canadian Certification Organization accredited by Standards Council of Canada.

1.5 - MOCK-UP

.1 Construct mock-ups in accordance with Section 01001 General Requirements.

.2 Construct mock-up 1m 2 minimum of each type acoustical panel tile ceiling including one outside corner.

.3 Construct mock-up where directed.

.4 Allow 24 hours for inspection of mock-up by Consultant before proceeding with ceiling work.

.5 When accepted, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of the finished work if accepted by Consultant.

1.6 - WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Collect and separate plastic, paper packaging and corrugated cardboard.

1.7 - ENVIRONMENTAL REQUIREMENTS

- .1 Permit wet work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20-40% before and during installation.
- .3 Store materials in work area 48 hours prior to installation.

1.8 - EXTRA MATERIALS

- .1 Provide extra materials of acoustic units in accordance with Section 01 00 10 General Requirements.
- .2 Provide acoustical units amounting to 2% of gross ceiling area for each pattern and type required for project.
- .3 Extra materials to be from same production run as installed materials.
- .4 Clearly identify each type of acoustic unit, including colour and texture.
- .5 Deliver to Consultant, upon completion of the work in this section.
- .6 Store where directed by Consultant.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Acoustic units for suspended ceiling system: to CAN/CGSB-92.1
 - .1 Type 1.
 - .2 Cellulose fibre with minimum 30 recycled content.
 - .3 Radar "ClimaPlus" CGC 2410.
 - .4 Flame spreading of 25 or less in accordance with CAN/ULC-S102.
 - .5 Smoke developed 10 or less in accordance with CAN/ULC-S102.

- .6 Noise reduction coefficient (NRC) designation of .55.
- .7 Ceiling Attenuation Class (CAC) rating 35 in accordance with ASTM E1264.
- .8 Lighting reflectance range of .84.
- .9 Edge type square.
- .10 Colour: White.
- .11 Size 24" x 48" 5/8 thick.
- .12 Shape: Flat.

PART 3 - EXECUTION

3.1 - EXAMINATION

- .1 Do not install acoustical panels and tile until work above ceiling has been inspected by Consultant.
- .2 This contractor shall inspect the existing support of the existing ceiling grid prior to inserting new tiles. This contractor shall be responsible for the support systems once the new acoustic panels have been installed. Report any support deficiencies to the Consultant prior to proceeding.

3.2 - INSTALLATION

- .1 Install acoustical panels and tiles in ceiling suspension system.

3.3 - APPLICATION

- .1 Install acoustical units parallel to building lines with edge unit not less than 50% of unit width with directional pattern running in same direction. Refer to reflected ceiling plan.
- .2 Scribe acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.

3.4 - INTERFACE WITH OTHER WORK

- .1 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, to be built into acoustical ceiling components.

3.5 - SCHEDULE

- . Type '1': to be used in all locations.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS.1 Section 01 00 10 - General Requirements.
.2 Section 06 20 00 - Finish Carpentry.

- 1.2 - REFERENCES
- .1 Architectural Painting Specifications Manual, Master Painters Institute (MPI).
 - .2 Systems and Specifications Manual, SSPC Painting Manual, Volume Two, Society for Protective Coatings (SSPC).
 - .3 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings) of the Environmental Protection Agency (EPA).
 - .4 National Fire Code of Canada.

- 1.3 - QUALITY ASSURANCE
- .1 Contractor shall have a minimum of five years proven satisfactory experience. When requested, provide a list of last three comparable jobs including, job name and location, specifying authority, and project manager.
 - .2 Qualified journeyman who have a "Tradesman Qualification Certificate of Proficiency" shall be engaged in painting work. Apprentices may be employed provided they work under the direct supervision of qualified journeyman in accordance with trade regulations.
 - .3 Conform to latest MPI requirements for interior painting work including preparation and priming.

- .4 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual "Approved Product" listing and shall be from a single manufacturer for each system used.
- .5 Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.
- .6 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Consultant.
- .7 Standard of Acceptance:
 - 1. Walls: No defects visible from a distance of 1000 mm at 90 to surface.
 - 2. Ceilings: No defects visible from floor at 45 to surface when viewed using final lighting source.
 - 3. Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.4 - ENVIRONMENTAL
PERFORMANCE
REQUIREMENTS

- .1 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.

1.5 - SCHEDULING OF
WORK

- .1 Submit work schedule for various stages of painting to Consultant for approval. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Consultant for any changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants in and about the building.

1.6 - SUBMITTALS

- .1 Submit product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with Section 01 00 10 General Requirements
- .2 Submit WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 00 10 General Requirements.
- .3 Upon completion, submit records of products used. List products in relation to finish system and include the following:
 - 1. Product name, type and use.
 - 2. Manufacturer's product number.
 - 3. Colour numbers.
 - 4. MPI Environmentally Friendly classification system rating.
 - 5. Manufacturer's Material Safety Data Sheets (MSDS).

1.7 - SAMPLES

- .1 Submit full range colour sample chips in accordance with Section 01 00 10 General Requirements.
- .2 Submit duplicate 200 x 300 mm sample panels of each paint stain clear coating with specified paint or coating in colours, gloss/sheen and textures required to MPI Painting Specification Manual standards submitted on the following substrate materials:
 - 1. 3 mm plate steel for finishes over metal surfaces.
 - 2. 13 mm birch plywood for finishes over wood surfaces.
 - 3. 50 mm concrete block for finishes over concrete or concrete masonry surfaces.
 - 4. 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.
- .3 When approved, sample panels shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

1.8 - QUALITY CONTROL

- .1 Provide mock-up in accordance with Section 01 10 00 General Requirements.

- .2 When requested by Consultant or Paint Inspection Agency, prepare and paint designated surface, area, room or item (in each colour scheme) to requirements specified herein, with specified paint or coating showing selected colours, gloss/sheen, textures and workmanship to MPI Painting Specification Manual standards for review and approval. When approved, surface, area, and/or items shall become acceptable standard of finished quality and workmanship for similar on-site work.

1.9 - EXTRA MATERIALS

- .1 Submit maintenance materials in accordance with Section 01 10 00 General Requirements.
- .2 Submit one - one 4 litre can of each type and colour of primer and finish coating. Identify colour and paint type in relation to established colour schedule and finish system as well as all locations where paint was applied by Room Name and Number.
- .3 Deliver to Consultant and store where indicated.

1.10 - DELIVERY,
HANDLING AND STORAGE

- .1 Deliver, store and handle materials in accordance with Section 01 10 00 General Requirements.
- .2 Labels shall clearly indicate:
1. Manufacturer's name and address.
2. Type of paint or coating.
3. Compliance with applicable standard.
4. Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Provide and maintain dry, temperature controlled, secure storage.
- .5 Observe manufacturer's recommendations for storage and handling.
- .6 Store materials and supplies away from heat generating devices.

- .7 Store materials and equipment in a well ventilated area with temperature range 7°C to 30°C.
- .8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .9 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Consultant. After completion of operations, return areas to clean condition to approval of Consultant.
- .10 Remove paint materials from storage only in quantities required for same day use.
- .11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazard materials.
- .12 Fire Safety Requirements:
 - 1. Provide one 9kg dry chemical fire extinguisher adjacent to storage area.
 - 2. Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - 3. Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.11 - SITE
REQUIREMENTS

- .1 Heating, Ventilation and Lighting:
 - 1. Ventilate enclosed spaces to prevent the build-up and distribution of paint odours within the building to the satisfaction of the Consultant.
 - 2. Perform no painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application

until paint has cured sufficiently.

3. Where required, provide continuous ventilation for seven days after completion of application of paint.
4. Coordinate use of existing ventilation system with General Contractor and ensure its operation during and after application of paint as required.
5. Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
6. Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate lighting facilities shall be provided by General Contractor.

.2 Temperature, Humidity and Substrate Moisture Content Levels:

- A. Unless specifically pre-approved by the specifying body and the applied product manufacturer, perform no painting work when:
 1. Ambient air and substrate temperatures are below 10°C.
 2. Substrate temperature is over 32°C unless paint is specifically formulated for application at high temperatures.
 3. Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
 4. The relative humidity is above 85% or when the dew point is less than 3°C variance between the air/surface temperature.
 5. Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
- B. Perform no painting work when the maximum moisture content of the substrate exceeds:
 1. 12% for concrete masonry (clay and concrete brick/block)
 2. 15% for wood.

3. 12% for plaster gypsum board.

C. Conduct moisture tests using a properly calibrated electronic Moisture Meter, except test concrete floors for moisture using a simple "cover patch test".

D. Test concrete, masonry and plaster surfaces for alkalinity as required.

.3 Surface and Environmental Conditions:

1. Apply paint finish only in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.

2. Apply paint only to adequately prepared surfaces and to surfaces within moisture limits noted herein.

3. Apply paint only when previous coat of paint is dry or adequately cured.

.4 Additional Interior Application Requirements:

1. Apply paint finishes only when temperatures at location of installation can be satisfactorily maintained within manufacturer's recommendations.

2. Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Consultant such that painted surfaces will have dried and cured sufficiently before occupants are affected.

1.12 - WASTE MANAGEMENT .1
AND DISPOSAL

Separate and recycle waste materials.

.2 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.,) are regarded as hazardous products and are subject to regulations of disposal.

.3 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

- .4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .5 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground the following procedures shall be strictly adhered to:
 1. Retain cleaning water for water-based materials to allow sediments to be filtered out.
 2. Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 3. Return solvent and oils soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriated cleaning and laundering.
 4. Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 5. Empty paint cans are to be dry prior to recycling.
- .6 Collect waste paint by type and provide for delivery to recycling facility.
- .7 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection by employees, individuals, or organizations for verifiable re-use or re-manufacturing. (Habitat for Humanity)
- .8 Close and seal tightly partly used sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.

- .2 Paint materials for paint systems shall be products of a single manufacturer.
- .3 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.
- .4 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids shall:
 1. Be water-based water clean-up.
 2. Be non-flammable biodegradable.
 3. Be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 4. Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .5 Water-borne surface coatings must be manufactured and transported in a manner that steps of process, including disposal of waste products arising therefrom, will meet requirements of applicable governmental acts, by-laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act.
- .6 Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .7 Water-borne surface coatings and recycled water-borne surface coatings must have a flash point of 61.0°C or greater.
- .8 Both water-borne surface coatings and recycled water-borne surface coatings must be made by a process that does not release:
- .9 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes must meet a minimum "Environmental Friendly" E2 rating.

2.2 - COLOURS

- .1 Consultant will provide Colour Schedule after Contract award.
- .2 Colour schedule will be based upon the selection of two base colour and two accent colours. No more than eight colours will be selected for the entire project and no more than three colours will be selected in each area.
- .3 Selection of colours will be from manufacturers full range or colours.
- .4 Where specified products are available in a restricted range of colours, selection will be based on the limited range.
- .5 Second coat in a three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

2.3 - MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. On-site tinting of painting materials is not allowed.
- .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
- .3 Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
- .4 Thin paint for spraying according in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Consultant prior to start of this work.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settle pigment, and colour and gloss uniformity.

2.4 - GLOSS/SHEEN
RATING

.1 Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following values:

Gloss Level Category	Units @ 60°	Units at 85°
G1-matte finish	0 to 5	Max. 10
G2-velvet finish	0 to 10	10 to 35
G3-eggshell finish	10 to 25	10 to 35
G4-satin finish		
G5-semi-gloss finish	35 to 70	
G6 - gloss finish	70 to 85	
G7-high gloss finish	>85	

.2 Gloss level ratings of painted surfaces shall be defined as specified herein and as noted on Finish Schedule.

2.5 - INTERIOR PAINTING

- .1 Concrete Masonry Units: smooth
1. INT 4.2D High performance architectural latex G4 finish premium grade
- .2 Structural Steel and Metal Fabrications: columns, beams, joists, etc.
1. INT 5.12B Waterborne light industrial G5 coating.
- .3 Galvanized Metal: doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.
1. INT 5.3M High performance architectural latex G5 finish. (G1 Finish inside doors.)
- .4 Wood Doors and Casework: shelving, millwork, etc.
1. INT 6.3E Polyurethane Varnish G6 finish. (over stain). Premium Grade

- .5 Plaster and Gypsum Board: gypsum wallboard, drywall, "sheet rock type material", etc., and textured finishes.
 - 1. INT 9.2B High performance architectural latex insert gloss level G3 finish.

PART 3 - EXECUTION

3.1 - GENERAL

- .1 Perform preparation and operations for interior painting in accordance with MPI Painting Specifications Manual except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

3.2 - EXISTING CONDITIONS

- .1 Investigate existing substrates for problems related to proper and completed preparation of surfaces to be painted. Report to Consultant damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using a properly calibrated electronic moisture meter, except test concrete floors for moisture a simple "cover patch test" and report findings to Consultant. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
 - 1. Stucco, Plaster and Gypsum Board: 12%.
 - 2. Concrete: 12%
 - 3. Clay and Concrete Block/Brick: 12%
 - 4. Wood: 15%

3.3 - PROTECTION

- .1 Protect existing building surfaces and adjacent structures from spatters, markings, and other damage by suitable non-suitable covers or masking. If damaged, clean and restore such surfaces as directed by Consultant.
- .2 Protect items that are permanently attached such as Fire Labels on doors and frames.

- .3 Protect factory finished products and equipment.
- .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .5 Removal of electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings shall be done by General Contractor prior to undertaking any painting operations. Items shall be securely stored and re-installed by General Contractor after painting is completed.
- .6 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
- .7 As painting operations progress, place "WET PAINT" signs in occupied areas to approval of Consultant.

3.4 - CLEANING AND OPERATION

- .1 Clean and prepare surfaces in accordance with MPI Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements as follows:
 - 1. Remove dust, dirt and other surface debris by vacuuming, wiping with dry clean clothes or compressed air.
 - 2. Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - 3. Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - 4. Allow surfaces to drain completely and allow to dry thoroughly.
 - 5. Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
 - 6. Use trigger operated spray nozzles for water hoses.

7. Many water-based paints cannot be removed with water once dried. However, minimize the use of kerosene or any such organic solvents to clean up water-based paints.
- .2 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, other pretreatment as soon as possible after cleaning and before deterioration occurs.
- .3 Where possible, prime surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
1. Apply vinyl sealer to MPI#35 over knots, pitch, sap and resinous areas.
 2. Apply wood filler to nail holes and cracks.
 3. Tint filler to match stains for stained woodwork.
- .4 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000mm.
- .5 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes blowing with clean dry compressed air, or vacuum cleaning.
- .6 Touch up of shop primers with primer as specified in applicable section. Major touch-up including cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas, shall be by supplier of fabricated material.
- .7 Do not apply paint until prepared surfaces have been accepted by Inspecting Agency Consultant.

3.5 - APPLICATION

- .1 Method of application to be as approved by Consultant. Apply paint by brush and roller. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
 1. Apply paint in a uniform layer using brush and/or roller of types suitable for application.
 2. Work paint into cracks, crevices and corners.
 3. Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
 4. Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Consultant.
 5. Remove runs, sags and brush marks from finished work and repaint.
- .3 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access and only when specifically authorized by Consultant.
- .4 Apply coats of paint as a continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .6 Sand and dust between coats to remove visible defects.
- .7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboard and cabinets and projecting ledges.

- .8 Finish inside of cupboards and cabinets as specified for outside surfaces.
- .9 Finish closets and alcoves as specified for adjoining rooms.
- .10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.6 -
MECHANICAL/ELECTRICAL
EQUIPMENT

- .1 Unless otherwise specified, paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as otherwise noted.
- .2 Boiler room, storage, janitor's closet, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
- .3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .5 Do not paint over nameplates.
- .6 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .7 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .8 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.7 -FIELD QUALITY
CONTROL

- .1 Field inspection of painting operations to be carried out by Consultant.
- .2 Advise Consultant when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

3.8 -RESTORATION

- .1 Clean and re-install all hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashing on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Consultant. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Consultant.

END

PART 1 - GENERAL

1.1 - RELATED SECTIONS.1 Section 01 00 10 - General Requirements

1.2 - REFERENCES .1 ASTM A653/A 653M - Standard Specifications for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by Hot-Dip Process.

.2 ASTM A240/A 240M - Standard Specifications for Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications.

1.3 - SUBMITTALS

.1 Submit under provisions of Section 01 00 10.

.2 Product Data: Manufacturer's data sheets on each product to be used, including:

.1 Preparation instructions and recommendations.

.2 Storage and handling requirements and recommendations.

.3 Installation methods.

.3 Shop Drawings: show layout, door swings, clearance to fixtures, hardware, and methods of anchoring.

.4 Verification Samples: For each finish product specified, tow samples, minimum size 6 inches (150 mm) square, representing actual product, colour and patterns.

.5 Operations and Maintenance Data: At completion of the project, furnish to the Owner two (2) copies of an Owner's Operation and Maintenance Manual.

1.4 - MOCK-UP

.1 Construct mock-up in accordance with Section 01001 General Requirements.

.2 Construct mock-up to show location, size, shape complete with all hardware and fasteners, back-up material, primer, caulking and sealant. Mock-up may be part of finished work.

- .3 Allow 48 hours for inspection of mock-up by Consultant before proceeding with work.

1.5 - DELIVERY, STORAGE AND HANDLING

- .1 Mark packaging with numbering or nomenclature used on shop drawings.
- .2 Store products in manufacturer's unopened packaging until ready for installation.

1.6 - PROJECT CONDITIONS

- .1 Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits. The Manual shall consist of a hard cover three ring binder with the project name on the front. Include in the manual the following information: Maintenance instructions, Catalogue pages for each product, Name/Address and phone number of the manufacturer and their Sales Agent, copy of the final shop drawings.

1.7 - WARRANTY

- .1 The toilet partition manufacturer shall guarantee all powder coated toilet partitions by written certification, for a period of 1 year against defects in material and workmanship. Warranty does not include installation errors, improper usage or vandalism. Warranty does include ease of graffiti removal.

1.8 - WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials.
- .2 Collect and separate plastic, paper packaging and corrugated cardboard for recycling.
- .3 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 - MATERIALS

- .1 Metal toilet partitions. Acceptable material: Hadrian Powder Coated toilet partitions.

2.2-METAL COMPARTMENTS .1
AND SCREENS

- Toilet Compartments: Headrail braced.
- .1 Compartment Depth and Width: as indicated on drawings.
 - .2 Door width: 23 inches (610mm), minimum; at wheelchair accessible compartments, 36 inches (915 mm, minimum.
 - .3 Door and panel type: Style: Standard (58 inch / 1473 mm high doors and panels)
 - .4 Door and Panels: Top at 69.5 inches (1765 mm) above finished floor. Bottom at 12 inches (305mm) above finished floor.
 - .5 Standard Panel Type: Style: Standard (64 inch / 1626 mm high doors and panels. These panels only required at end of stall when located across from washroom entrance door. See floor plans.
 - .6 Standard Panels:
 1. Top at 69.5 inches (1765 mm) above finished floor.
 2. Bottom at 6 inches (152 mm) above finished floor.
 - .7 Pilaster Width: As required to fit space; minimum 3 inches (76mm).
 - .8 Pilaster Height: 81.5 inches (2070 mm).

- .2 Urinal Screens: Wall mounted
 1. Depth: 24 inches (610 mm).
 2. Height: Top at 54 inches (1372 mm) and bottom at 12 inches (305mm) above finished floor.
 3. Mounting: Stirrup brackets.

2.3- METAL MATERIALS

- .1 Powder Coated Steel Panels, Pilasters, and Doors: Hollow steel sheet construction with formed edges welded and ground smooth.
 1. Steel Face Sheet: Panel flatness zinc coated galvanneal steel, ASTM A65 3/A 653M Grade 33.
 2. Edges: interlocked under tension, welded, with roll-formed oval crown locking bar; corners mitered, welded and ground smooth.
 3. Core: Honeycomb with maximum cell size of 1 inch (25mm), laminated under pressure to face sheet.
 4. Doors: 1 inch (25mm) thick, with 22 gauge (0.8mm) thick face sheets.

5. Panels: 1 inch (25mm) thick with 22 gauge (0.8mm) thick face sheets.
 6. Headrail Braced Pilasters: shall be 1-1/4 inch (32mm) thick, with 20 gauge (0.9 mm) thick face sheets. Top of headrail braced pilasters to be reinforced with 20 gauge (0.9mm) channel for strength and rigidity.
 7. Finish: High performance graffiti resistant powder coating, electrostatically applied and oven cured to smooth uniform finish; preparation by cleaning and phosphatizing.
 8. Colour: Shall be #510 Black.
- .2 Pilaster Shoes: Type 304 stainless steel, 4 inches (102mm) high, one-piece welded design.
1. Finish: Polished.
- .3 Door Hinges:
1. Top: Concealed hinge bracket with a high strength threaded metal hinge pin with a self-lubricating nylon sleeve.
 2. Bottom: Concealed gravity hinge; adjustable to set the door to rest at any position when not latched.
 3. Material: Chrome plated zinc, polished finish.
- .4 Stops and Keepers:
1. Continuous stop and keeper: extruded aluminum, full length of door, with ¼ inch (6mm) wide continuous rubber bumper locked into place. Finish to match door and pilaster finish.
- .5 Door Latches:
- Concealed, mortised turn latch with face plate flush with edge face of door, exterior turn slot for emergency access.
1. On wheelchair access doors provide turn lever that does not require fingertip grip.
 2. Material: Chrome plated zinc, polished finish.

- .6 Door Pulls for out-swinging Door: Pulls mounted on outside.
 - 1. Material: Chrome plated zinc, polished finish.
- .7 Fasteners: Provide fasteners of type appropriated to members being fastened and substrate to which they are being fastened.
- .8 Door Stops shall be provided and mounted as indicated on the drawings as typical for every stall. Door stop to be type CBH120.
- .9 Provide stainless steel panel on urinal side of all toilet partitions and urinal screens.

PART 3 - EXECUTION

3.1 - EXAMINATION

- .1 Do not begin installation until substrates have been properly prepared.
- .2 If substrate preparation is the responsibility of another installer, notify Consultant of unsatisfactory preparation before proceeding.
 - .1 Stud Walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
 - .2 Hollow Masonry Units; use toggle bolts drilled into cell/wall cavity.
 - .3 Solid Masonry or Concrete: use bolt with lead expansion sleeve set into drilled hole.

3.2 - INSTALLATION

- .1 Ensure supplementary anchorage, if required, is in place.
- .2 Do work in accordance with CAN/CSA-B651 and manufacturer's recommendations.

3.3 - ERECTION

- .1 Partition Erection
 - .1 Install partitions secure, plumb and square.
 - .2 Leave 12 mm space between wall and panel or end pilaster.
 - .3 Anchor mounting brackets to masonry/concrete surfaces using screws and shields: to hollow

walls using bolts and toggle type anchors, to steel supports with bolts in threaded holes.

- .4 Attach panel and pilaster to brackets with through type sleeve bolt and nut.
- .5 Provide for adjustment of floor variations with screw jack through steel saddles made integral with pilaster. Conceal floor fixing with stainless steel shoes.
- .6 Equip each door with hinges, latch set, and each stall with coat hook mounted on side wall, mounting heights as indicated. Adjust and align hardware for easy, proper function. Set door open position at 30° to front. Install door bumper wall mounting, type.
- .7 Equip out swinging doors with door pulls on inside and outside of door in accordance with CAN/CSA-B651.
- .8 Install hardware grab bars.
- .9 Secure headrail to pilaster face with not less than two fasteners per face.
- .10 Set tops of doors parallel with overhead brace when doors are in closed position.

.2 Floor supported partition erection

- .1 Secure pilasters to floor with pilaster supports anchored with minimum 50 mm penetration in structural floor.
- .2 Level, plumb and tighten installation with leveling device.
- .3 Secure pilaster shoes in position.
- .4 Set tops of doors level with tops of pilasters when doors are in closed position.

3.4 - PROTECTION

- .1 Protect installed products until completion of project.

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.2 Touch-up, repair or replace damaged products as directed by the Consultant.

END

PART 1 - GENERAL

- 1.1 - RELATED SECTIONS.1 Section 07 90 00 - Joint Sealers
- .2 Section 08 11 00 - Steel Doors and Frames
- .3 Section 15 - Mechanical
- 1.2 - REFERENCES .1 American Society for Testing and Materials (ASTM)
- .1 ASTM A 366M-91 (R1993), Specifications for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality.
- .2 ASTM A 653/A653 M-90, Specifications for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .3 ASTM D 822-89, Practice for Conducting Tests on Paint and Related Coatings and Materials using Filtered Open-Flame Carbon-Arc Light and Water Exposure Apparatus
- 1.3 - SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements
- .2 Indicate fabrication and erection details, including anchorage, accessories, and finishes.
- 1.4 - SAMPLES .1 Submit samples in accordance with Section 01 00 10 General Requirements.
- .2 Submit duplicate samples of each type of louver showing colour and finish.
- .3 Show frame detail and finish.
- 1.5 - CLOSEOUT SUBMITTALS .1 Provide operation and maintenance data for manual operated louvers for incorporation into manual specified in Section 01 00 10 General Requirements.

PART 2 - PRODUCTS

2.1 - MATERIALS

.1 Materials

- .1 Galvanized steel sheet: commercial quality to ASTM A 526M with Z275 zinc coating.
- .2 Sheet Steel: commercial quality to ASTM A 366 with Class I matte finish.
- .3 Screws and fasteners: same material as fabricated items.
- .4 Prefinished steel sheet.

.2 Acceptable Product

- .1 Acceptable Product Model: 61DGD-FR as manufactured by Nailer Industries Inc.

.3 Door Louvers

- .1 Construct door louvers from steel minimum 18 GA thick. Minimum free area 45%. Provide fasteners to suit louver material.
- .2 Use standard blades.
- .3 Provide separate adjustable trim member for clamping louver in opening.
- .4 Miter frame and trim members at corners and secure rigidly with corner brackets.
- .5 Secure interior frame with countersunk tamperproof screws.
- .6 Fire-rated doors to have louver 70° C ULC listed fusible link with stainless steel operating spring and dead lock bar.
- .7 Louver frame to suit door thickness.

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PART 3 - EXECUTION

3.1 - INSTALLATION

- .1 Install louvers where indicated.
- .2 Install louvers in accordance with manufacturer's printed instructions.
- .3 Adjust louvers so moving parts operate smoothly.
- .4 Cooperate with the ceiling and acoustic

END

PART 1 - GENERAL

- 1.1 - REFERENCES .1 Conform to Contract Requirements and Division 1- General Requirements as part of this Section.
- 1.2 - RELATED SECTIONS .1 Section 06 10 00 - Rough Carpentry
- .2 Section 09 11 00 - Non-Load Bearing Wall Framing
- .3 Section 10 16 00 - Toilet Partitions.
- 1.3 - SHOP DRAWINGS .1 Submit shop drawings in accordance with Section 01 00 10 General Requirements
- .2 Clearly indicate size and description of components, base material, surface finish inside and out, hardware and locks, attachment devices, description of rough-in frame, building-in details of anchors for grab bars.

PART 2 - PRODUCTS

- 2.1 - MATERIALS .1 Sheet Steel: commercial grade, stretcher leveled sheet steel to ASTM A526-90 with G90 zinc coating to ASTM A525-93.
- .2 Stainless Steel Sheet: to CSA G110.6-1968, Type 304 with #4 finish, minimum 0.80mm thick.
- .3 Stainless Steel Tubing: AISA Type 304, commercial grade, seamless welded, 18 ga. Wall thickness, unless otherwise noted.
- .4 Adhesive: epoxy type contact metal.
- .5 Fasteners: screws and bolts, stainless steel or hot-dip galvanized. Expansion shield plastic, lead or rubber as recommended by fixture manufacturer for component and its intended use.
- 2.2 - FINISHES .1 Chrome and Nickel Plating: to ASTM B456-95 satin finish.

- .2 Stainless Steel: to AISI No. 4, luster finish.
- .3 Baked Enamel: condition metal by applying one (1) coat of metal conditioner to CGSB.
- .4 1-GP-107Ma, apply one (1) coat Type 2 primer to CAN/CGSB-1.81-M90 and bake; apply to (2) coats Type 2 enamel to CAN/CGSB-1.88-92 and bake to hard, durable finish. Sand between final coats. Colour selected from standard range by Architect.
- .5 Manufacturer's or brand names on face of units not acceptable.

2.3-WASHROOM
ACCESSORIES

- .1 The listed products are equally acceptable. Do not inter mix products of different manufacturers unless the chosen manufacturer cannot provide the required product, or product item listed does not give the option for alternatives.
- .2 Sanitary Napkin Disposal: Supply and install one (1) sanitary napkin disposal at each water closet in women's washrooms where designated by Owner, of the following manufacturer's model: Frost Model No. 620.
- .3 Surface-mounted hand dryer: aluminum casting, finished with silver metallic baked enamel, air-outlet nozzle and concealed air-inlet vanes. 1850 Watts, tamperproof mounting.
Fan: Dynamically balanced, single inlet, air flow through heating element at 90 cfm.
Acceptable Material: Dyson AirBlade BP or Consultant approved equal.
- .4 Soap dispenser: refer to mechanical plans.
- .5 Two roll toilet tissue dispenser - Frost or equal.
- .6 Fixed Grab Bars: Supply and install behind and on one side of each handicap water closet where indicated on drawings and as, located in accordance with Ontario Building Code 3.8.3.8, grab bars of one of the following manufacturer's

models:

- .1 Bobrick - Model No. B-5806.99 x 24, B-81622.99 x 30 x 30 (L-shaped)
- .2 Bradley - Model No. 8322-00124 and 8322-0053030 (L-shaped)
- .3 Frost - Model No. 1001 SP 24 and 1003 SP 30 x 30 (L-shaped)
- .4 Watrous - Model No. 3701-M24, and W-3704-P-M3030 (L-shaped)

- .7 Fixed Mirrors: Supply and install one (1) fixed mirror where indicated in all washrooms of one of the following manufacturer's models:
Bobrick Model No. B-1556-2436
Bradley Model No. 7481-24x36
Watrous Model No. W-8226-2436

2.4 - FABRICATION

- .1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.
- .2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.
- .3 Brake form sheet metal work with 1.5mm (1/16") radius bends.
- .4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- .5 Back paint components where contact is made with building finishes to prevent electrolysis.
- .6 Hot-dip galvanize ferrous metal anchors and fastening devices to CAN/CSA-G164-M92.
- .7 Shop assembly components and package complete with anchors/fittings.
- .8 Deliver inserts and rough-in frames to job site at appropriate time for building-in. Provide templates or rough-in measurements as required.

PART 3 - EXECUTION

3.1 - INSTALLATION

- .1 Install and secure fixtures rigidly in place as follows:

- .1 Stud Walls: install steel back-plate to stud prior to plaster or drywall finish. Provide plate with threaded studs or plugs.
- .2 Hollow Masonry Units; use toggle bolts drilled into cell/wall cavity.
- .3 Solid Masonry or Concrete: use bolt with lead expansion sleeve set into drilled hole.

END

PART 1 - GENERAL

1.1 - GENERAL

- .1 The specifications of Section 15 01 00 apply to and govern all work of Division 15.
- .2 Comply with the Instructions to Bidders, the General Conditions of the Contract Documents and all amendments and supplements thereto, and with Division 1.
- .3 Include Taxes as outlined in General Conditions and Tendering Instructions.
- .4 Whenever the word "consultant" is indicated under Division 15 this would be defined as the "mechanical engineer" unless specifically indicated otherwise.

1.2 - SCOPE OF SPECIFICATIONS

- .1 The listing hereinafter of any article, material, operation or method requires that this Division is to provide each item listed of the quality and subject to the qualifications noted, and this Division is to perform each operation prescribed according to the condition stated, providing therefore, all necessary labour, equipment and incidentals.

1.3 - SCOPE OF WORK

- .1 Related work specified elsewhere:
 1. Electrical Division 16.
- .2 Work included: This Division is to include the supply of all labour, tools, equipment and materials for the installing, testing and putting into proper operation the complete system as herein specified, as shown on the drawings, or as is reasonably inferable from either or both.
- .3 Equipment items that are supplied as packaged units under this Division are to include all internal wiring, relays, contactors, switches, transformers, motor starters, controls, and ancillaries as required for the intended operation, and to be complete with all necessary terminals suitable for connection to power source and external devices at a single location.

1.4 - INTENT OF
SPECIFICATIONS AND
DRAWING

- .1 Any specific item or work omitted from one and which is mentioned or reasonably implied in the other is to be considered as properly and sufficiently specified and must be provided by this Division.
- .2 Should any discrepancy or conflict appear between these specifications and the drawings which leave this Division in doubt as to the true meaning and intent of the drawings and specifications, a ruling is to be obtained from the Consultant before submitting the tender. If clarification is not sought prior to the closing of tender, the Consultants decisions are final, conclusive binding on this Division.

1.5 - REGULATION AND
PERMITS

- .1 All work to be carried out in accordance with the latest editions of all the relevant authorities, codes or regulations including but not limited to the Ontario Building Code, including Part 7, Plumbing; Canadian Regulations for the Construction and Inspection of Pressure Vessels;, Ontario Fire code, Ministry of Labour Guidelines, Occupational Health and Safety Act, Ontario Electrical Safety Code, Gas Utilization Code, Canadian Heating, Ventilation and Air Conditioning code, NFPA, Canadian Standards Association, and A.S.H.R.A.E Standards.
- .2 All authorized code inspections required by above mentioned laws, rules and regulations, inclusive of any fees, obtaining permits, issuance of notices are to be arranged and paid for by the Division.
- .3 Furnish all necessary certificates as evidence that work installed complied with aforementioned laws and regulations of all governing authorities, prior to acceptance of the work and before the final certificate of payment is issued.
- .4 Any deviations from the plans and specifications requested by an official representing one or any of the authorities having jurisdiction over that portion of the

work must be brought to the attention of the Consultant prior to proceeding with the change. Any additional costs incurred for extra work performed without instruction from the consultant will not be considered.

1.6 - EXAMINATION OF THE SITE AND DOCUMENTS .1

This Division and related subtrades, before tendering, are to examine the site and all drawings and specifications of other trades and familiarize himself with the local conditions, building construction and finishes affecting the work under this section. No allowances are to be made for any extra expense incurred by him through his failure to do so.

1.7 - CONTRACT DRAWINGS .1

The Contract Drawings are not intended to be shop or working drawings and all measurements are to be taken from the Architectural dimensional drawings or in the field. This division shall make, without any extra expense or credit to the Owner, any necessary changes or additions to the work to accommodate the Architectural or Structural conditions.

.2 Where shop or working/installation drawings are required, this Division shall provide them and submit them to the Consultant for review.

.3 The Contract drawings show the minimum standard acceptable regardless of any lesser standards set by any codes or regulations having jurisdiction.

.4 The Architectural, Structural and Electrical contract drawings are to be examined to ensure that the work of this division may be satisfactorily completed.

.5 Notify the Consultant upon discovery of any conditions, which adversely affect the work of this Division. No allowances are to be made after awarding Contract for any expenses incurred through the failure to do so.

1.8 - STORAGE OF MATERIALS .1

Proper facilities for storage and protection of material and equipment are to be provided at the jobsite by this Division.

- .2 All pipe to be used on the job to be carefully stacked off the floor with ends capped or suitable plugged to prevent the entry of dirt etc., until such times as when the piping is being installed. Similarly all openings in pressure vessels, tanks, etc., to be kept closed until ready for use. Any piping not suitably protected to be removed from the site and replaced with new.
- .3 Equipment located on site, must also be suitably protected to prevent damage from abuse or misuse. Equipment and/or materials damaged after delivery to site is to be replaced or repaired to the satisfaction of the Consultant.
- .4 Make known, any hazardous or flammable materials to be used and method of application before using. This division shall be responsible for proper storage and all necessary safety requirements in the storage and use of all hazardous and flammable materials used in the execution of their work.

1.9 - CO-OPERATION OF TRADES

- .1 This Division is to co-operate with all other trades on the job, so that all equipment can be satisfactorily installed, and so that no delay is caused to any other trade. Any reworking of installed equipment, piping or ducting to accommodate the installation of other trades work shall be performed at no extra cost.

1.10 - WARRANTY

- .1 This division to warranty products and execution of work under the Division against defects of material and workmanship for one full year after date of Substantial Performance.
- .2 Repair defects that are discovered or develop during this period and make good any resulting damage to equipment or building. Repairs to be carried out at no cost to owner.
- .3 Provide extended warranties where indicated in other sections of this Division. Extended warranties to commence on termination of the standard one year warranty and to be an extension of these same provisions.

1.11 - CHANGES IN THE WORK .1

Submit prices for additional work to be deleted, requested by the Consultants with a complete breakdown as follows:

- Quantities of all items of equipment and material and unit costs.
- Total net cost of material.
- Total man hours.
- Total labour cost.
- Overhead and profit as specified in the Supplementary General Conditions.
- All Applicable taxes
- Changes to scheduled completion.

1.12 - LOCAL UTILITIES .1

The Contractor before tendering to contact all utilities to determine the local procedures and policies concerning servings, and portions of that service which would be supplied or available through the utilities and incur any cost. The Contractors to ensure no delays in construction or service connections.

1.13 - EXISTING SERVICES .1

Where work involves the breaking into or connecting existing services, carry out work at times directed by governing authorities, with minimum of disturbance to the premises and its operation.

.2 Before commencing work, establish location and extent of service liens in area of work and notify Consulting of finding.

.3 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.

.4 Remove abandoned service lines. Cap or otherwise seal lines and cut-off points, in manner approved by authorities having jurisdiction over service.

.5 Record locations of maintained, re-routed and abandoned service lines. The sub-contractors concerned shall provide the Division with all necessary dimensions required to accurately locate those services.

- .6 Where to location of any of these utilities has been shown on the plans, such information is not guaranteed. It is the responsibility of this Division to verify locations, elevations, etc., immediately after they move on the site. If for any reason the information obtained necessitates changes in procedures or design, they must advise the Consultant at once. If this verification of existing conditions is not done at the outset and any problems arise, the responsibility for same is entirely this Division's.
- .7 Where it is necessary to temporarily shut down equipment or services serving essential areas, this Division, shall include premium costs to ensure the work force is scheduled for "round the clock" operation in order to minimize disruption and equipment downtime.

PART 2 - PRODUCTS

2.1 - MATERIAL

- .1 Materials and equipment are specifically named and described in this specification to establish a standard that this Division is to adhere to.
- .2 The terms "approved alternate", "alternate manufacturer" are used to indicate a product or manufacturer which, in the Consultants opinion, meets the basic performance and quality of the specified product or manufacturer, subject to all requirements so specified being met. Dimensions, weights, electrical requirements, etc., are not always equal to the specified item. Except where a product or manufacturer is "base bid" when an approved alternate product(s) or manufacturer(s) is named, this Division may provide and install the alternate but must be prepared to bear any and all costs incurred by its use.
- .3 The term "base bid" indicates a product or manufacturer the tender amount must be based on. This Division may list on the tender form an "alternate product or manufacturer" with cost savings (if any) and the Owner shall have the option of accepting or rejecting the alternate.

- .4 Whenever an alternate product is not listed in the specifications and is proposed for approval prior to tender close, this Division to guarantee that such proposed alternates are not to adversely affect the space requirements allocated on the drawings for the material, item, plant or equipment specified. This division agrees to bear any additional expense incurred by the Owner, the General Contractor and other divisions due to the use of proposed alternates, particularly in connection with any required changes in the work and any additional material and installation costs by any other part of the project. When proposing an alternate product, this division to make the Consultants aware of any structural, architectural, mechanical or electrical design changes necessary to accommodate the alternative product.
- .5 Equipment manufacturer's and sub-contractors submitting alternates for this contract, upon written request for the Consultant, are to qualify themselves to have the experience in the successful manufacturer and/or installation of the type of work and quality of materials specified and shown.
- .6 Request for approval to be accompanied with complete specifications for the equipment, showing dimensions, ratings, etc. Approval or rejection of an alternate shall be issued in writing to the applicant.
- .7 Any equipment installed without the Consultant's written approval, is to be removed and the correct equipment installed at the Division's expense. No consideration is to be allowed for claims of delay of schedule in this case.
- .8 In the event the approved alternate equipment is not available for any reason, the specified equipment is to be installed, any and all costs incurred shall be the responsibility of this Division.

- .9 The Consultant reserves the right to accept or reject an alternative without explanation.

2.2 - ACCESS DOORS

- .1 The Contractor to supply access doors of the adequate size and with appropriate clearances, wherever any equipment, cleanouts, valves, dampers, fire dampers, etc., which require service, maintenance or removal and are built in or concealed behind walls, or ceiling. Doors to be installed by the General Contractor. Coloured thumb tacks are to be used in acoustic tile ceilings.
- .2 Access doors to be U.S.S. gauge steel with concealed hinges, anchor straps, screwdriver operated lock, rounded safety corners and dust tight doors that open 180°. Doors are to be adequately sized to suit equipment which is to be accessed, but in no case smaller than 8" x 8" (200mm x 200mm). Provide spanner head cam latch for all wall-mounted access doors.
- .3 In acoustic tile ceiling, where access cannot be achieved through tile, install access doors to suit tile. Markers are to be approved colour-coded markers to indicate type of valve or equipment concealed.
- .4 Where access doors are to be installed in a fire rated assembly, the access door must have a fire rating equal to or greater than the assembly fire rating. Fire rated access doors to be ULC rated and in accordance with NFPA-80.
- .5 Acceptable manufacturers: Acudor, Le Hage, Mi-Fab.

2.3 - SUPPORTS

- .1 This Division shall furnish and install all special structural work required for the installation of mechanical equipment and motors, etc. All details to meet the approval of the Consultant and Drawings are to be submitted for all major steel supports.
- .2 Where on the drawings or specifications special isolation bases are noted, these shall be the responsibility of this division.

- .3 All equipment shall be properly aligned on bases before being bolted down.
- .4 All floor mounted equipment to be set at least 4" (100mm) above the floor on concrete bases, and anchored securely with anchor bolts unless indicated otherwise. Installation of bases and all associated work to be by Division 3, identified accurately by this Division as to location and dimensions.

2.4 - SPECIAL TOOLS AND
SPARE PARTS

- .1 Furnish spare parts as follows:
 - a) One set of mechanical seals and volute gasket for each pump.
 - b) One spare coupler for each pump.
 - c) One set of V-belts for each piece of machinery(matched for multiple belt drives)
 - d) One set of filters for each filter bank, to be installed after substantial completion and prior to balancing.
- .2 Identify spare part container as to contents and replacement parts number.
- .3 Provide one set of special tools where required to service equipment as recommended by manufacturers.
- .4 Furnish one grease gun and adapters to suit different types of grease and fittings.
- .5 Provide a list of spare parts provided in operating and maintenance instructions.

PART 3 - EXECUTION

3.1 - INSTALLATION

- .1 Each piece of equipment or material to be checked against the specification and reviewed shop drawing before installation, all clearances and installation instructions are to be strictly adhered to. Failure to comply with the instructions shall result in removal and proper reinstallation of the equipment at no cost to the Owner.
- .2 Where mechanical equipment is installed in a fire rated assembly provide fire dampers and drywall enclosure or other as required to maintain the assembly fire rating to the approval of this Division. Include all costs.

**3.2 - EXCAVATION AND
BACKFILLING**

- .1 All excavation to be carried out in accordance with Occupational Health and Safety requirements, by-laws and authorities having jurisdiction over installation of this work.
- .2 Bottoms of trenches to be excavated so that piping, conduits, ducts, etc, are supported on a solid bed of undisturbed earth with additional excavation under joist to permit joint to be properly made up. Provide concrete pad, brick or concrete piers properly reinforced under all piping, etc. below grade when a solid undisturbed earth is not obtainable. Approval for any alternate procedure is at the discretion of the Consultant.
- .3 Bed beneath pipe is to be laid of an approved sand supplied and consolidated to provide a continuous solid bearing the pipe. Do all necessary plumbing required to maintain any excavation free of water.
- .4 Inform the Consultant immediately if excavation reveals unexpected sub-surface conditions such as heavy seepage or springs.

- .5 Obtain the Consultant's approval prior to commencement of backfilling of the pipe trenches. Backfill the trenches carefully to prevent injury to the work and subsequent settlement.
- .6 Do not puddle of flood with water for consolidating the backfill. Add water during the compaction to the optimum moisture of the backfill material.
- .7 Ensure special precautions at all pipe penetrations in foundation wall.
- .8 Prior to backfilling of underfloor plumbing services trenches, the installation must be inspected and tested by an authorized representative. Provide a minimum 48 hours notice. If tested and inspected by local authority submit written certification.

3.3 SLEEVES, HOLES AND PATCHING

- .1 All cutting and patching to be as specified under the General Conditions and Supplementary Conditions bearing in mind that the integrity of the fire separations are to be maintained at all times.
- .2 All holes, pipe chases, etc., through walls and floors that are not fire separation are to be large enough to accommodate the thickness of the insulation specified.
- .3 All cutting and patching, sleeves, grouting, painting and drywall required by this Division is to be performed by fully craftsman of that respective trade. All cutting and patching required by this Division to be provided by the Division, unless indicated otherwise.
- .4 All holes, pipe chases, etc, through walls and floors that are fire separations are to be properly firestopped as specified.
- .5 Holes through masonry walls are to be sleeved with schedule 40 steel pipe, all other holes to be sleeved with light gauge metal sleeves, unless indicated otherwise.

- .6 Holes through exterior walls and roof are to be properly flashed and made weatherproof. Refer to Architectural drawings for details.
- .7 Holes through structural steel are to be reinforced with steel plates welded each side as detailed in the Structural Engineer's drawings and specifications or to meet their approval.
- .8 Sleeves for uninsulated pipes are to be sized to allow ½" (13mm) clearance between the pipe and the sleeve. The space between the pipe and the sleeve to be sealed with rockwool insulation to avoid smoke, sound and dust transmission and firestopped.
- .9 Pipes are not to be in direct contact with plaster, concrete or any other finishing material.
- .10 Sleeves for all piping penetrating mechanical room floor to extend 2" (50mm) above the finished floor and sealed at the floor.
- .11 Sleeves in potentially wet floor areas to extend at least 1" (25mm) above the finished floor.
- .12 Ensure no contact between copper tube or pipe and ferrous sleeve.
- .13 This Division to provide detailed dimensioned drawings prior to pouring floors, erecting masonry, or installing a roof deck. Drawings to indicate size and location of all openings to ensure correct bridging installed as indicated under Division 5.
- .14 This Division is responsible to install sleeves for piping and ducts and frames for openings for grilles, louvers etc., as the construction progresses. If these sleeves and frames are not installed by this Division during construction the cost of cutting openings, chases and installing the sleeves and frames is to be at This Divisions expense by the respective trade involved.

- .15 Provide sleeves for all ducting penetrating floors and masonry and concrete walls.
- .16 Ducts penetrating fire separations to have any voids between the duct sleeve and fire separation properly firestopped as specified. Ducts penetrating non fire separations to have any voids between the duct sleeve and separation filled with rockwool insulation to avoid smoke, sound and dust transmission.
- .17 Supply and set all necessary sleeves for this work prior to pouring of concrete.
- .18 Approval of the location, size and proposed method of cutting through structural components must be received before proceeding.

3.4 - WORKMANSHIP

- .1 Employ and experienced, responsible tradesperson to supervise the work and retain this supervisor on the job throughout the construction period until completion of work, and all mechanical systems are fully operational and have been commissioned and demonstrated to the Owners unless otherwise approved or directed by the Consultant.
- .2 Employ only skilled licensed pipe fitters, etc for execution of work. Workmanship to be first class not only as regards to durability, efficiency and safety, but also as regards to neatness of detail.
- .3 Set equipment accurately, plumb and level and align hanger rods and steel supporting structures.
- .4 Products and installations in the opinion of the Consultant found to be defective; not in accordance with specifications; damaged or defected; or of poor workmanship to be rejected.
- .5 Rejected work is to be repaired or replaced at no cost to the Owner.

3.5 - PIPING

- .1 All piping for this Division is to be run concealed where possible and grouped so that

valves, etc., are accessible through as few access panels or doors as possible, while still maintaining adequate working space.

- .2 Piping that does not present a neat workmanlike appearance, in the opinion of the Consultant, is to be reworked according to his instructions without extra cost to the Owner. Arrange piping within pipe chases that have been designed for access of personnel to ensure that all access is not impeded.
- .3 In specifically designated unfinished areas such as mechanical rooms or existing areas, run pipes neatly parallel or in banks and group valves. Piping may be run exposed in these designated areas. The crossing over of pipes must be kept to a minimum.
- .4 The piping shown in the drawings is located diagrammatically in the space in which it is intended to run. Co-operate and co-ordinate with work of other divisions, also installing pipes, conduits, ducts, etc., with the same area. No extras are to be paid for any relocation of piping to suit the work of other Divisions.
- .5 Separation by approved dielectric unions is to be applied to all ferrous and non-ferrous domestic water piping. Separation of ferrous and non-ferrous piping on closed loop systems to meet accomplished with the use of brass or brass or bronze fittings and/or valves. All connecting or touching metals that could give rise to electrolytic action to be separated with insulation.
- .6 All piping is to be installed with adequate change in direction, expansion joints and anchors, so that the piping and equipment will in no way be strained or distorted by expansion and contraction.
- .7 If on the job circumstances require additional change of direction and expansion loops, furnish and install same at no extra cost.

- .8 All take-offs from the mains to be made using swing joints whenever possible.
- .9 Hydronic branches serving down feed risers are to be taken lower from sides or bottom of mains and grade down slightly to risers. Branches which serve units above the mains are to be taken from the top or sides of mains.
- .10 Anchors are to be provided where necessary to protect equipment and to generally be made from $\frac{1}{2}$ " (13mm) M.S. plate with structural steel angle and channel sections.
- .11 Suitable anchors and guides are to be provided where shown or where necessary for all vibration devices.
- .12 Expansion loops are to be located midway between anchors except where shown otherwise. All expansion loops are to be cold sprung 50% in accordance with the latest edition of the ASHRAE Guide.
- .13 Install all water piping so that the lines can be drained. Provide drip tee with $\frac{3}{4}$ " (19mm) ball valve with cap and chain
- .14 All exposed plumbing piping in finished area to be chrome plated unless indicated otherwise.

3.6 - IDENTIFICATION OF PIPING

- .1 Identify all visible piping whether fully exposed or in accessible spaces such as above acoustic tile ceilings.
- .2 Identify all concealed piping mains in concealed areas such as drywall ceilings and pipe trenches etc prior to these areas being enclosed.
- .3 Identify the medium in the piping with Brimar System #1 wrap-around pipe markers (or equal) including direction-of-flow arrows.

<u>Medium in Pipe</u>	<u>Background Colour</u>	<u>Lettering Colour</u>
Domestic Cold Water	Green	White
Domestic Hot Water	Yellow	Black
Domestic Hot Water Return	Yellow	Black
Tempered Water	Yellow	Black
Sanitary drain	Green	White
Storm drain	Green	White
Plumbing Vent	Green	White
Heating Water Supply	Yellow	Black
Heating Water Return	Yellow	Black
Steam	Yellow	Black
Condensate	Yellow	Black

- .4 All piping identification to be done on clean surfaces.
- .5 Size all wrap-around labels for the pipe being labeled.
- .6 All piping exposed in mechanical rooms shall be covered with coloured PVC jacket, colour coded to identify the medium in the piping. Colour codes to Board standard.
- .7 Location:
- Locate markers and classifying colour on piping systems so they can be seen from the floor or platform.
 - Identify piping runs at least once in each room.
 - Do not exceed 50 ft. (15m) between identifications in open areas and above T bar ceilings.
 - Identify both sides where piping penetrates walls, partitions and floors.
 - Where piping is concealed in pipe chase or other confined space, identify at point of entry and leaving, and at each access opening.
 - Identify piping at started and ending points of runs and at each piece of equipment.
 - Identify piping at major manual and automatic valves immediately upstream of valves. Where it is not possible, place identification as close to valve as possible.
 - Identify branch, equipment or building served after such valve.

- Identify piping in concealed spaces prior to spaces being enclosed.

3.9 - VALVE TAGS

- .1 All valves installed under the Division to have securely affixed to them an approved valve tag bearing an engraved number which shall be used to identify the valve on an indexed valve list prepared and mounted in a glazed frame in the mechanical or boiler room.
- .2 Beside each number on the list of valves to be listed, identify the function normal position, and location of each valve so tagged.
- .3 Valve tags shall be either engraved lamincoid or plastic valve tags (Brimar B11101-39) with 1/4" tall lettering of a colour to contrast with the label colour.
- .4 Valve tags shall be colour coded as follows:

<u>System</u>	<u>Tag Colour</u>	<u>Letting Colour</u>
Domestic piping systems	Green	White
Heating water piping systems	Yellow	Black

3.10 - PAINTING

- .1 All field priming and finishing to be performed by Division 9.
- .2 Provide field surface preparation, priming and finishing of the work of this Division including exposed bare (or insulated) pipework, fittings, ductwork, miscellaneous metals, supports, and equipment, in accordance with Division 9.

3.11 - PLACING IN OPERATION

- .1 Prior to acceptance and on completion of work make a complete operational test of systems and work carried out under Division 15.
- .2 At all fixtures, adjustments for correction water flow to be made, this is to include hot and cold water systems and flush valves.
- .3 At all drains, covers and grating are to be removed and cleaned, traps cleaned out and drains thoroughly flushed.

- .4 All strainers are to be cleaned out after two weeks normal operation.
- .5 All filters in fan cabinets are to be removed, thoroughly cleaned and stored for future use, install new filters in units. Bird and insect screens on all louvers to be cleaned. All coils to be combed out where necessary and vacuumed out.

3.12 Clean-Up

- .1 Avoid accumulation of scrap and debris resulting from the operations of this Division and at all times help maintain the working site in neat and clean condition. On completion of the contact, remove all scrap and debris resulting from the work of this Division and clean all equipment installed by this Division.

3.13 - START UP SERVICE

- .1 Provide services of a qualified technician responsible for assisting the Owner's staff in becoming familiar with operating of systems, co-ordinating work of control manufacturer, acting on any complaints from the Owners, or Consulting regarding operation of any of the systems installed under this Division.
- .2 Provide start-up of major pieces of mechanical equipment or systems, by representative of equipment manufacturer or person qualified and recognized by the equipment manufacturer.
- .3 Submit start up reports on all mechanical equipment and systems verifying correct installation and operating parameters in all modes of operation. Include service reports in operating and maintenance manuals.
- .4 Notify Consultant prior to start-up on any piece of mechanical equipment or system. Demonstrate operation of ally or any mechanical system or equipment as directed by the Consultant in his presence.

3.14 - TESTING

- .1 Notification of Tests: Consultant must be given at least 48 hour notice of date and time of which any and all tests are to be carried out. Under no circumstances must a test be assume conclusive unless it has been witnessed by the Consultant or his designated representative.
- .2 Test all piping systems for leaks, providing gauges, materials and labour as required. Equipment furnished as part of the permanent installation shall not be used for testing purposes. Before testing, remove all equipment which is not designed to withstand the test pressures. All piping is to be tested before covering is applied.
- .3 Before final payment, test the operation of each system and all equipment installed, make all necessary adjustments and replacements and demonstrate to the satisfaction of the Consultant, that all equipment is operating as intended and without undue noise and vibration.

END

PART 1 - GENERAL

1.1 - REQUIREMENTS
INCLUDED

- .1 Shop drawings and product data.
- .2 Working/interference drawings.
- .3 As-built drawings.
- .4 Operating and maintenance included extended warranties.

1.2 - RELATED WORK
SPECIFIED ELSEWHERE

- .1 Basic Materials and Methods, Section 15 05 00.
- .2 Plumbing, Section 15 40 00.
- .3 Plumbing Fixtures and Trim, Section 15 44 00.

1.3 - ADMINISTRATIVE

- .1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as not cause delay in the construction schedule. Failure to submit in ample time is not considered sufficient reason for an extension of the Construction Schedule and no claim for extension by reason of such default is allowed.
- .2 Work affected by the submittal is not to proceed until the review is complete unless an approval is obtained from the Consultant.
- .3 Review submittals prior to submission to the Consultant. This review represents that necessary requirements have been determined and verified, and that each submittal has been checked and coordinated with the requirements of the Contract Documents.

1.4 - SHOP DRAWINGS

- .1 Submit shop drawings in accordance with the General Requirements of Division 1 and as required in various sections of these specifications and on the drawings, see also Commissioning Plan Schedule.
- .2 Shop drawings to be submitted with a cover sheet(s) on the Contractor's letter head listing the following information: Project, Owner/Client, Mechanical/Electrical Consultant/Mechanical

Contractor/Supplier/Specification
Section/Materials or Equipment Submitted.

Include space for review stamps Consultant,
General Contractor and Mechanical Contractor.

- .3 Prepare and submit for review, where specified, shown or considered necessary by the Consultant, shop drawings showing details or work as follows:
1. Fabrication and erection dimension.
 2. Sections, arrangements and details which include complete construction as well as interconnections with other work.
 3. Location and type of anchors and fastenings.
 4. Materials including gauges, thickness, sizes and finishes.
 5. Descriptive names of equipment and mechanical and electrical characteristics when applicable
 6. Data verifying that superimposed loads will not affect function, appearance, and safety of work shown on shop drawings as well as other work interconnected.
 7. Assumed design loadings, dimensions of elements and materials specifications for load bearing members.
 8. Complete composite wiring diagrams as required by Division 16 of each mechanical system. Indicate all electrical requirements both internal and external for review and coordination of other trades.
 9. Indicate all accessories and clearances for operation and servicing.
- .4 Submit shop drawings, unless otherwise specified in form of reproducible transparency (sepia) plus one set of prints.
- .5 Manufacturer's printed data sheets for standard items are acceptable providing pertinent characteristics are identified and relate to specified items. Submit eight (8) copies of data sheets except where specified otherwise.

- .6 Check shop drawings and data sheets, before submission as follows:
 - a) Against contract documents and other applicable shop drawings, to ensure that work adjacent to and affecting the other work is accurately detailed.
 - b) To ensure that work shown on shop drawings conforms to requirements of Contract Documents.
 - c) Enclose notice in writing of any variations from requirements of Contract Documents.
- .7 Indicate on shop drawings that they have been checked by applying stamp "checked and certified correct for construction". Including date and signature. Drawings and details submitted without such stamp or whenever it is evident that the drawings have not been checked (despite approval stamp) are not reviewed and not reviewed and are to be returned to this Division.
- .8 The Consultant's review of shop drawings and data sheets pertain to general design only. Errors in dimensions, quantities or interference are to be marked if noticed, but is not in any way to relieve the Contractor from the responsibility to complete the work as shown and specified.
- .9 All shop drawings are to be submitted in Imperial dimensions.
- .10 Shop drawings are to be returned with "Reviewed", "Reviewed as Noted" or "Revise and Resubmit".
 1. Reviewed - drawings conform with the general design concept.
 2. Reviewed as Noted - Drawings conform with the general design concept, subject to the corrections noted. Drawings to be corrected and resubmitted for final review and incorporation into maintenance manuals. Such submission is not to hold up manufacture.
 3. Revise and Resubmit - Drawings are rejected and manufacture of this equipment is not to proceed. Drawings are to be resubmitted with required

correction on equipment.

1.5 -
WORKING/INTERFERENCE
DRAWINGS

- .1 Before commencing any work, the Contractor is to prepare working/interference drawings to ensure that all components, including any components of other divisions, are to be properly accommodated with the spaces provided, ensure all clearances required by jurisdictional authorities and for proper maintenance are indicated and maintained.
- .2 Prepare drawings to indicate coordination and method of installation of a system with other systems where their relationship is critical. Ensure all details of equipment, apparatus and connections are coordinated.
- .3 As an alternate to preparing interference drawings, regularly scheduled meetings on site with all associated trades are to be conducted as necessary but not less than one week apart.
- .4 Failure to coordinate with all other trades could result in reworking of installed equipment, piping or ducting at the discretion of the Consultant. Any reworking to accommodate the installation of other trades is to be performed at no extra cost.

1.6 - AS-BUILT DRAWINGS

- .1 As-built drawings are to be maintained in accordance with the general requirements of Division 1.
- .2 The Consultant is to provide this Division with an extra set of white prints on which to show clearly in red in, as the job progresses, all changes and deviations from the plans, including all changes as part of change orders, site instructions or site condition.
- .3 Record location of concealed mechanical services and components. Dimension and reference all concealed and buried mechanical services from visible and accessible permanent features of structure.

- .4 In accordance with the Commissioning Schedule Plan, submit a complete set of record drawings, marked "as-built" and dated.
- .5 In accordance with the Commissioning Schedule Plan, submit a complete set of record drawings, marked "as-built" and dated.

1.7 - MAINTENANCE DATA
AND OPERATING
INSTRUCTIONS

- .1 As-built drawings are to be maintained in accordance with the general requirements of Division 1.
- .2 Front cover of each binder to be suitably lettered as follows:
- .3 Provide plastic tab indices for all sections of the manual, provide separate sections for each major piece of equipment and for groups of smaller products.
- .4 Provide master index at the beginning of each binder indicating all items included in each section.
- .5 Provide list of names, addresses and telephone numbers of equipment suppliers, Installing Contractors, General Contractors, Architect and Consulting Engineer.
- .6 Provide final review shop drawings for each manufactured item in addition to the operating and maintenance instructions.
- .7 Operating instructions to include:
 - 1. General Description of each mechanical unit and system.
 - 2. Step by step procedure to follow commissioning of each piece of equipment, including start-up, break-in, and routine normal operating instructions and sequences. Including regulation control stopping, shutdown, and emergency instructions. Include summer, winter and any special operating instructions.
 - 3. Schematic control diagrams for each separate system. Each diagram to indicate locations of start-stop switches, insertion thermostats,

- thermometers, freezestats, firestats, pressure gauges, automatic valves and accessories. Correct operating settings for each control device to be indicated on diagram.
4. Drawings of each control panel identifying all components on the panels and their function and sequence of operation.
 5. All mechanical equipment wiring and control diagrams as installed.
 6. Provide original manufacturers illustrations, shop drawings and assembly drawings.
- .8 Maintenance instructions are to include:
1. Manufacturer's printed maintenance instructions for each item of mechanical equipment installed under this Division. Instructions are to include installation instructions, description of the unit or system and component parts numbers and lists, name of supplier and maintenance and lubrication instructions. Include complete nomenclature and commercial number or replacement parts.
 2. Summary list of each item of mechanical equipment requiring servicing and lubrication, indicating the name of the equipment item, location of the all points of lubrication recommended, and frequency of lubrication.
 3. Include routing procedures and guide troubleshooting, disassembly, repair and reassembly instructions, alignment, adjustment, balancing and checking instructions.
 4. Provide list of manufactures spare parts, current prices and recommended quantities to be maintained in storage.
 5. Balancing and test reports.
- .9 Provide written warranty on this Division's letterhead addressed to the Owner, copied to the General Contractor.
- .10 Furnish complete Operating and Maintenance Manuals to the Owner's/Owner's Representative for review in accordance with the Commissioning Plan Schedule. Allow a minimum fourteen (14) days for review.

.11 Furnish Final reviewed Operating and Maintenance Manuals to the Owner's/Owner's Representative fourteen (14) days prior to scheduled Functional Tests.

1.8 - EXTENDED WARRANTY .1 This Division is to submit extended warranties for specific materials and/or work specified in their respective sections.

.2 Extend warranties are to be issued on the Manufacturers or respective Contractor's letterhead, under seal, and issued in the name of the Owner.

PART 2 - PRODUCTS NOT USED

PART 3 - EXECUTION NOT USED

END

PART 1 - GENERAL

1.1 - GENERAL .1 Conform to the General Provisions of Section 15 01 00.

1.2 - RELATED WORK
SPECIFIED ELSEWHERE

.1 Painting - Section 09 91 10

.2 Insulation - Section 15 18 00

.3 Plumbing - Section 15 40 00

.4 Plumbing Fixtures & Trim - Section 15 44 00

.5 Electrical - Division 16

1.3 - QUALITY OF
ASSURANCE

.1 Requirements of Regulatory Agencies:

1. Conform to local and district by-laws, regulations and published engineering standards.

2. Conform to Ontario Building Code 1997 containing the Building Code Act, and Ontario Regulation 403/97 including all amendments.

3. Conform to ACNBC Canadian Plumbing Code, current edition.

4. Conform to Regulations for Construction Project, Ontario Regulation 659, under the Occupational Health and Safety Act, current edition.

1.4 - SUBMITTALS

.1 Submit shop drawings in accordance with Section 15 01 10, Paragraph 1.4 for all the following items:

- Valves and Suction Guides
- Strainers and Air Eliminators
- Pressure and Temperature Gauges
- Backflow Preventers and Flow Switches
- Expansions Joints, Expansion Compensators and Flexible Connections
- Roof Flashing

PART 2 - PRODUCTS

2.1 - PIPE AND PIPE FITTINGS

- .1 Heating Water Piping
- .1 Steel pipe 3" (50mm) and smaller- Schedule 40, electric weld or seamless A.S.T.M. specification A-53.
 - .2 Steel pipe 2 ½" (65mm) and larger - schedule 40, electric weld or seamless A.S.T.M. specification A-53 with butt welding ends.
 - .3 Copper pipe ¾" (19mm) and smaller - Type "L" hard drawn copper with wrought copper solder type fittings to ASTM B888-83.
 - .4 Dielectric unions to be used between cooper and steel pipe.
 - .5 Steel pipe fittings up to and including 2" (50mm) are to be threaded joints malleable iron type.
 - .6 Steel pipe fittings 2 ½" (65mm) and larger are to be forged steel butt welded type with all joints welded.
 - .7 All elbows are to long radius type.
 - .8 Cooper pipe fittings to be wrought copper or cast bronze solder type.
 - .9 Grooved piping will not be suitable.
- .2 Sanitary Dain, Storm
and Vents
- .1 Soil and waste pipe 3" (75mm) and over to be medium weight cast iron type MJ, unless indicated otherwise; 2 ½" (65mm) and under copper DWV pipe and fittings when above floor and Type L copper when buried.
 - .2 Vent pipe 3" (75mm) and up is to be medium weight cat iron type MJ; 2 ½" (65mm) and under galvanized steel pipe with cast iron drainage fittings or copper type DWV.

- .3 Below grade piping only:
- ABS piping in accordance with CSA-B181-1 for 4" (100mm) pipe sizes and larger.
 - P.V.C. gravity sewer piping SDR28 for 6" (150mm) pipe sizes smaller to CSA-B182.1
 - P.V.C. gravity sewer piping SDR35 for 8" (200mm) pipe sizes and smaller to CSA-B182.1

.3 Domestic Water Piping and Cold Condensate Piping.1 Domestic water lines, (cold, hot and re-circulating) above grade shall be type L. Copper to ASTM B88-83.

- .2 Exposed piping in finished areas shall be chrome plated unless noted otherwise.
- .3 Air conditioning condensate lines above grade to be Type M copper to ASTM B88.

2.2 - HANGER AND SUPPORTS

- 1 Hangers shall be carbon steel with copper or plastic coating for direct support of copper tubing, and shall be carbon steel with black corrosion resistant finish for all other piping.
- .2 Use Grinnell Fig. 65, 70, 97, CT-99, 101, 260 or 269 hangers for individual support of all horizontal piping.
- .3 Provide Grinnell Fig. 168 pipe covering protection saddles at each hanger where pipes are insulated.
- .4 Provide Grinnell Fig. 171 single pipe rollers complete with Fig. 160 protection saddles on all heat mains where indicated.
- .5 Use 100 mm x 40mm minimum steel channel for joint support of horizontal piping.
- .6 Use welded beam attachments or beam clamps for support of horizontal pipe from steelwork.
- .7 Perforated pipe hangers are not acceptable.
- .8 Determine spacing between pipe rack supports using smallest pipe size.

- .9 Provide Grinnell fig. 262 pipe saddles on each pipe where trapeze hangers are used.
- .10 Hangers and supports shall be manufactured by Grinnell, Myatt or Economec.

2.3 - VALVES AND ACCESSORIES

- .1 Domestic Water.1 This Division shall furnish and install all special structural work required for the installation of mechanical equipment and motors, etc. All details to meet the approval of the Consultant and Drawings are to be submitted for all major steel supports.

a) Gate Valves:

Up to 2" (50mm) Crane 438, 1324, 1701
Screwed and/or Soldered Newman Hattersly 33X
Milwaukee 105 & 1105
Jenkins 3110J & 313J
Nibco T-113 and S-113
Kitz 40 and 41

2" (50mm) and larger, Crane 465-1/2
flanged Newman Hattersley 504
Jenkins 454J
Milwaukee F-2885M
Nibco F-617-0

b) Globe Valves:

Up to 2" (50mm) Crane 5, 7 & 1310
Screwed and/or Soldered Newman Hattersly 13 & 14
Millwaukee 590T & 1590T
Jenkins 106BJ & 1068BPJ
Nibco T-235-Y & S-235-Y
Kitz 03, 09 and 10

2" (50mm) and larger, Crane 351
flanged Newman Hattersley 731
Jenkins 2342J
Milwaukee F-2981M
Nibco F-718-B

c) Ball Valves:

Up to 2" (50mm) Crane F9202, F9222

Screwed and/or Soldered Newman Hattersly 13 & 14
Milwaukee BA-100-600
WOG, Chrome Ball
Jenkins 201F and 202F
Nibco T-FP600 & S-FP600
Kitz 58 and 59

*Note: Provide stem extensions where valves are
located in insulated pipes.

d) Swing Check Valves:

Up to 3" (75mm) Crane 37 and 1342
Screwed and/or Soldered Newman Hattersly 47
Milwaukee 509 and 1590
Jenkins 4092J & 4093J
Nibco T-413
Kitz 24

3" (75mm) and larger,
flanged Crane 373
Newman Hattersley 651
Jenkins 587J
Milwaukee F-2974M
Nibco F918

e) Shock Absorbers:

Ancon - Shok-gard
Enpoco - HT Series
Zurn - Shok Trol

f) Drain Cocks:

Emco 10240
Cambridge Brass 32W 200
Jenkins 201CJ
Nibco T-585-70-66-HC

.2 Heating.1 NOT USED

.3 Strainers.1 Furnish and install strainers where shown on
the drawings. Strainer baskets shall be of
stainless steel or monel selected for the
service for which they are installed.
Strainers 2" (50mm) I.P.S. and smaller shall
be screwed; 2 1/2" (65mm) I.P.S. and larger shall
be flanged or grooved ends flanged strainers
shall be provided with a blow-off ball valve,
full size of blow-off tapping, with a short
nipple on discharge side. Smaller strainer
shall have nipple and cap affixed. Strainer to
be Colton, Sarco, Armstrong or Watts.

.2 Strainer bodies for mechanical systems shall
be cast iron or brass.

.3 Strainer bodies for plumbing systems shall be brass.

.4 Air Eliminators

.1 Air eliminators on Hydronic chilled water and heating remains to be Sarco AWN-150, Hoffman 792, Colton AUDT - #150.

.2 Air eliminators are to be connected to air collecting chambers with ½" (13mm) I.P.S. nipple and isolating gate valve. Air collecting chambers shall consist of a full size tee.

.5 Air Separators

.1 Furnish and install as shown on drawing an air separator with tangential nozzles. The air separator shall be fitted with an NPT vent connection to facilitate installation of piping to connect expansion tank or air vent to the air separator. An NPT tapping shall be provided on the bottom of the air separator to facilitate blowdown.

.2 The air separator shall be equipped with a steel system strainer with free area of not less than four times the cross-sectional area of the connecting pipe. Strainer can be removed for routine cleaning.

.3 Air separators sizes 2" (50mm), 2 ½" (65mm) and 3" (75mm) will have cast iron body with NPT connections and will be designed and constructed for 160 psig (1100 kPa) at 350 F (177 C). Air separators 4" (100mm) to 12" (305 mm) will be fabricated steel with flanged connections, size are to be designed and constructed for 165 psig (1140kPa) at 375F (190C).

.4 All sizes are to be designed and constructed in accordance with Section VIII, Division 1 of the ASME Boiler and Pressure Vessel Code.

.5 Acceptable manufacturers: Armstrong, Taco, Amtrol.

.6 Pressure Gauges

.1 To be 4 ½" (115mm) black cast aluminum case, black figures on white dial face, phosphor bronze tube, brass rotary movement, ranges to

suite pressure of medium being measured, c/w needle valve. Provide pressure snubbers on pump suction and discharge.

- .2 Trerice series 600C with type FFG - No 740 needle valves and No 872 snubbers, Winter Weiss or Baker.

.7 Temperature Gauges

- .1 To be 3 ½" diameter, aluminum case, Bi-Ometal thermometer, with scale calibrated in both degrees F and C to suit range of medium being measured, black markings on white background. All thermometers to include separable well.
- .2 Acceptable Products: Winters HVAC BI-METAL THERMOMETERS 160/161/165 or equals Trerice, Baker or Weiss.

.8 Expansion Joints

- .1 For steel pipe to be self-equalizing type with two-ply stainless steel bellows, carbon steel shrouds and internal positive anti-torque device.
 - Flexonics Model H or H3, or Hydro-Flex.
- .2 For copper pipe to be self-equalizing with two-ply bronze bellows, all bronze construction and internal positive anti-torque device.
 - Flexonics Model HB Or HB3 or Hydro-Flex.

.9 Flexible Connections

.1 Provide flexible connections with inner core or annularly corrugated stainless steel with an outer casing of two layers of braided high tensile steel. Hose to be complete with couplings and fittings of steel with threaded or flanged connections, depending on pipe size. Flexonics or Hydr-Flex.

.10 Escutcheons

- .1 Supply and install chromium plated escutcheon plates on all piping passing through finished walls, floors and ceilings. Where sleeves project above the floor in potentially wet areas, provide chromium plated Grinnell fig. 400 escutcheon.
- .2 Escutcheons plates shall be installed over the insulation and shall have set screws or clamping

devices to keep the escutcheon plate in place.

- .11 Flow Switches.1 To be single pole, double throw paddle type, stainless steel bearings, monel bellows, paddle, corrosion resistant with screws adjustment.
- .2 Acceptable product: McDonnell Miller FS4-3.

PART 3 - EXECUTION

3.1 - PIPING INSTALLATION

- .1 Make all piping connections to boiler, pumps, radiation, coils, fan coil units, humidifiers, etc. Unions and valves to be located so that removal of units and equipment is possible without disconnecting more than a minimum of pipe work, and without shutting down any other pieces of equipment.
- .2 Where branch pipes are welded into mains with the use of a "T" connections, torch cut openings must be cut true, beveled and filed smooth. Branch pipes must not be allowed to project inside of main pipe. Openings must not be cut large enough to permit entry of welding material and slag within the pipe.
- .3 Grade horizontal water distribution piping 1" per 30 ft (2.78 mm per meter) rising in direction of flow, wherever possible. Provide ball valves with cap and chain for draining at all low points and vent valves at high points.
- .4 Provide adequate space around piping to facilitate application of insulation.
- .5 All reductions in pipe size to be made with eccentric fittings. Minimum size of run shall be $\frac{3}{4}$ " (19mm).

.2 Sanitary, Storm and
Vent Piping

- .1 Install sanitary drawings and connect fixtures where show. Connect up all drains to drain, open hub or other approved locations. Connect to drainage system all drains from equipment supplied under other Sections.
- .2 Horizontal sanitary drawings shall have the following minimum slopes.
- .3 Connect storm drains to all roof hoppers, specialty gutter outlets, etc. Carry main drain to point as shown on drawings.
- .4 All fixtures are to be vented in accordance with Local and Provincial Regulations. Vents are to be run as directly as possible and to be properly graded so as to drain back to fixture connection. Vents are to be concealed in walls, and ceilings; vent stacks are to be built into pipe chases, concealed areas, and walls, with particular attention paid to building frame construction.
- .5 Vent stacks are to be connected to the vent extensions provided by Division 7 and installed by the General Contractor. The only exposed vent pipe of vent stack allowed will be in the areas provided in pipe spaces, mechanical room, etc. Maintain a minimum of 10 ft. (3m) from fresh air intakes to location of vent stack.

.6 Domestic Water
Piping and Cold
Condensate Piping

- .1 Connect cold water to all fixtures, hose bibs, as required and as shown. This is to include all connections to equipment and units supplied under other Sections.
- .2 All equipment is to have unions or flanged connection for equipment removal, and where possible piping is to run concealed in all walls and ceiling, but may run exposed in mechanical rooms and warehouse.
- .3 Install shock absorbers ahead of all solenoid valves or other quick closing valves and where shown. Vacuum breakers are to be installed on all fixtures where required by the Ontario

Plumbing Code, or Local Plumbing Inspector.

- .4 Connect condensate piping to all drain pans and run to nearest drain.

- .7 Equipment Connection.1 Install unions and/or flanges to connect piping to all pieces of equipment. All equipment is to have isolating valves for equipment removal.

- .8 Flashing.1 All vent stacks and soil stacks are to connect to isolated stackvents. Stackvents are supplied and installed through the roof by Division 7. All holes through the roof are to be properly flashed and made weatherproof by roofer as required under Division 7.

- .9 Thermal Expansion and Contraction of Piping.1 The contractor to be responsible for expansion and contraction of all pipework. Erect all pipe in such a manner that the strain and weight does not come upon pipe connections of apparatus. Provide bends, or swing joints except where corrugated bellows type expansion joints are shown or required.

- .10 Air Elimination and Drainage.1 All low points to be installed with a ball valve with a screwed connection suitable for connecting a hose. Install air vents at all points in system/

3.2 - PIPING JOINTS

- .1 Threaded Joints
 - .1 Pipe is to be cut at right angles and reamed to full bore.
 - .2 Threads are to be carefully cut with sharp dies and proper cutting oil.
 - .3 All chips and other foreign matter are to be removed from the pipe before installation into system.
 - .4 Proper joint compound is to be used on male threads only. A good grade of hemp fibre is to be used on threads.
 - .5 Connections to be made with proper wrench to suite pipe size, additional leverage not to be allowed.

.6 Of threaded joints leak after assembly by normal methods, they are to be disconnected and corrected if possible, or replaced. Over tightening or caulking is not considered a proper correction.

.2 Solder Joints

- .1 Pipe is to be cut at right angles, reamed, deburred and sized.
- .2 End of pipe and inside of fittings to be cleaned with steel wool to a bright metallic finish.
- .3 Flux to be applied to outside of pipe and inside of fittings; fitting to be revolved on pipe to ensure proper distribution of flux.
- .4 Using solder wire, heat assembly with torch until solder has flowed completely around fittings. Wipe off excess solder. Solder used on potable water systems to consist of 0.2% maximum lead composition or alternately use 90/5/5 tin/silver/antimony. Large size pipe joints are to be completely tinned before assembly.

.3 Cast Iron Joints

.1 Mechanical joint cast iron piping and fittings will be assembled in accordance with manufacturer's recommendations.

.4 P.V.C. Polypropylene and A.B.S. Piping Joints

.1 Install P.V.C. Polypropylene and A.B.S. joints as per manufacturer's recommendations, using approved joining methods, compounds and materials.

3.3 HANGERS AND SUPPORTS

.1 Horizontal piping is to be supported as close as practical to the connected equipment and intermediated hangers are to be spaced as follows:

<u>Pipe size</u>	<u>Single Rod Dia.</u>	<u>Double Rod Dia.</u>	<u>Maximum Spacing</u>	
			<u>Copper</u>	<u>Steel</u>
Up to 3/4"	3/8"	3/8"	5 ft.	6 ft.
(Up to 19mm	10mm	10mm	1.5m	1.8m)
1" - 1 1/4"	3/8"	3/8"	5 ft.	8 ft.
(25mm to 32	10mm	10mm	1.5m	2.4m)

1	1 1/2" -2" 3/8"	3/8"	10 ft.	10 ft.
	(38mm & 50mm 10mm)	10mm	3m	3m)
2	1/2" & 3" 1/2"	3/8"	10 ft.	12 ft.
	(65mm & 75mm 13 mm)	13 mm	3m	3.7m)
4"	5/8"	5/8"	-	15 ft.
(100mm	16mm	16mm	-	4.6m)
6"	3/4"	5/8"	-	17 ft.
(150mm	19mm	16mm	-	5.2m)

- .2 Cast Iron Piping is to be supported at intervals not exceeding 5 ft. (1.5m) with clevis hanger securely anchored to building.
- .3 Cast iron fittings are to be supported at intervals not exceeding 3 ft (900mm).
- .4 Cast iron pipes are to be supported at every floor.
- .5 No support or hanger securing devices is to penetrate waterproofing roof membrane above steel deck.
- .6 Provide roller supports, floor stands, wall brackets, etc., for all lines running near the floor or near the walls, which can be properly supported by the floors or walls.
- .7 All pipe support arrangements are to be adjustable for proper support and grading.
- .8 Suspend piping using malleable iron or wrought steel hangers suspended from hanger rods threaded each end not more than 1 1/2" (38mm). Continuous threaded hanger rod is to be used in concealed locations only.
- .9 Hanger rods are to be attached to concrete inserts, beam clamps, welded brackets or similar device. Co-ordinate location and method of pipe support in building with Structural Engineer.
- .10 Roof supports for gas piping to be provided by Division 7.

- .11 Provide hangers for chilled water and cold water piping with the hanger around the insulation.

3.4 - VALVES AND ACCESSORIES

- .1 Use valve of line size unless noted otherwise or being used for balancing purposes.
- .2 Provide isolating valves in each branch from the main line and where shown.
- .3 Provide isolating valves for all fixtures, appliances etc., including the following:
 - 1. On each branch serving more than three fixtures
 - 2. At the base of each main riser.

Note: valves are not necessarily shown on the drawings.
- .4 Unless indicated otherwise provide radiation regulating valves at each terminal unit and in locations where valve is to be used for regulating purposes. Ball valves are not acceptable for balancing purposes.
- .5 Provide ½" (13mm) ball valve with cap and chain at any low point of the system not drainable through the main supply piping.
- .6 All valves are to be tagged and a chart showing location and equipment controlled to be turned over to the Owners upon completion of the job.
- .7 Escutcheon plates are to be installed at walls and floors where pipes are exposed to view.
- .8 Install auto air vents at all high points in system.
- .9 Install drain cup at each backflow preventer vent and drain opening and pipe to nearest floor drain.

3.5 - TEMPERATURE GAUGES

- .1 Install temperature gauges in all locations noted.

- .2 Check range of temperature expected at each location and supply thermometer with range to suit.
- .3 All temperature gauges to be installed in separable wells.

3.6 - PRESSURE GAUGES

- .1 Install pressure gauges in all locations noted and before and after each circulating pump.
- .2 Check range or pressures expected at each location and supply pressure gauge with range to suit.

3.7 - INSPECTION AND TESTING

- .1 Make tests that are required, by any authority having jurisdiction, in the presence of the authority's authorized inspector. Tests are to be certified by him.
- .2 Test all piping at the completion of roughing-in before connecting to new systems, and prior to concealment, insulation or covering of piping.
- .3 Notify the Consultant in writing at least forty-eight (48) hours prior to start of test. Failure to do so may require test to be re-done.
- .4 Ball test drains to O.W.R.C. Regulation 815/84, Ontario Plumbing Code.
- .5 all new drainage and vent piping is to be tested using water test method before connection of fixtures and maintain the required water level for 24 hours. Pressure test science room and prep room piping in accordance with manufacturer's instructions. Do not pressure test with compressed air or gas.
- .6 Final air test drains, waste and vent piping to O.W.R.C. Regulation 815/84, Ontario Plumbing Code.
- .7 All water distribution piping to be tested at a pressure of not less than 150 psig (1034kPa) maintained for 6 hours without necessity of additional pumping.

- .8 Heating water piping may be tested by filling the system with water and applying a hydrostatic pressure of 125 psig (860 kPa) which is to be maintained for at least 24 hours. If a freezing hazard exists the Consultant may permit a compressed air test to be substituted.
 - .9 Perform tests before application of pipe covering. Test buried and concealed piping before backfilling or concealing in structure. Protect equipment and parts not capable of withstanding test pressure during test.
 - .10 Any leaks found are to be properly repaired and test reapplied until results satisfactory to the Consultant are obtained.
- 3.8 - PLACING IN OPERATION**
- .1 Upon completion of the work and before turning over the job, the Contractor is to make a complete test of the various systems.
 - .2 Flush and sterilize domestic water mains in accordance with the procedures established by AWWA Specification C601.
 - .3 Flush all other domestic water piping in accordance with Local and Provincial Codes.

END

PART 1 - GENERAL

1.1 - GENERAL

- .1 Conform to the General Conditions, Supplementary General Conditions and Sections of Division 1, as applicable.
- .2 Conform to the General Provisions of Section 15 01 00.
- .3 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.

1.2 - RELATED WORK
SPECIFIED ELSEWHERE

- .1 Basic Materials and Methods, Section 15 05 00.
- .2 Plumbing Fixtures and Trim, Section 15 44 00.

1.3 - CLARIFICATION

- .1 Insulation may extend through fire rated separations when used in conjunctions with fire stopping material specifically tested for this purpose.

PART 2 - PRODUCTS

2.1 - GENERAL

- .1 Insulating material by Fibreglas Canada Limited, Manson Insulation, Knauf Fibreglass & Owens Corning are considered equal.
- .2 For adhesives and mastics for applications noted equal products of the following manufacturers will be accepted: Flinkote, Benjamin Foster; Minnesota Mining and Manufacturing; Pronto.
- .3 All insulation and covering material are to be non combustible, and asbestos free. Vapour barrier jacket, and adhesive to be fire retardant to approved standards of fire hazard classification for building materials. Flame spread rating not to exceed 25 and smoke rating not to exceed 50.

- .4 "Koolphen K" phenolic foam insulation with a thermal conductivity of 0.13 BTU.in/HR.FtSq. F and factory applied ASJ jacket is acceptable, except where piping is exposed then PVC jacketing is required. Thickness of insulation shall provide equivalent or better thermal resistance (R-factor) than specified.

2.2 - MATERIALS

.1 Domestic Cold Water

- .1 Piping - Fibreglass heavy density fiberglass insulation with factory applied all services vapour barrier jacket lapped and adhered with Flinkote 203 adhesive or equal. Insulation conductivity shall be in the range of 0.22 - 0.28 BTU in (h/ft.F) with mean temperature of 100°F. Seal all joints with 4" (100mm) wide strip of all service jacket material. Finished with a smooth layer of asbestos free finishing cement and covered with canvas.
- .2 Fittings and valves - Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.
- .3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.
- .4 Exposed insulation - Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.
- .5 Insulation to be the thickness as follows:

<u>Pipe Size</u>	<u>Insulation Thickness</u>
½" (13mm) - 1 ¼" (32mm) Ø pipe	1" (25mm)
1 ½" (38mm) - 8" (203mm) Ø pipe	1 1/2" (38mm)

.2 Domestic Hot Water, Domestic Hot Water Recirculating Piping

- .1 Piping - Fibregalls heavy density fiberglass insulation with factory applied all service jacket lapped and adhered with Flintkote 203 adhesive or equal. Seal all joints with 4" (100mm) wide strip of all service jacket material. Insulation conductivity shall be in the range of 0.22 - 0.28 BTU in/(h.ft.F) with mean temperature of 100°F.
- .2 Fittings and valves - Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.
- .3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.
- .4 Exposed insulation - Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.
- .5 Insulation to be the thickness as follows:

<u>Pipe Size</u>	<u>Insulation Thickness</u>
½" (13mm) - 1 ¼" (32mm) Ø pipe	1" (25mm)
1 ½" (38mm) - 8" (203mm) Ø pipe	1 1/2" (38mm)

.3 Heating Supply and Return Piping

- .1 Piping - Fibregalls heavy density fiberglass insulation with factory applied all service jacket lapped and adhered with Flintkote 203 adhesive or equal. Seal all joints with 4" (100mm) wide strip of all service jacket material. Insulation conductivity shall be in the range of 0.22 - 0.29 BTU in/(h.ft.F) with mean temperature of 125°F.

- .2 Fittings and valves - Moulded or fabricated mitred segments of a thickness equal to that of the pipe insulation and finished with a layer of asbestos free finishing cement, trowelled smooth and covered with canvas.
- .3 Alternate method for insulating fittings: Pre-moulded high impact PVC fitting covers with fiberglass inserts, end joints sealed with PVC tape.
- .4 Exposed insulation - Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.
- .5 Insulation to be the thickness as follows:

<u>Pipe Size</u>	<u>Insulation Thickness</u>
¾" (19mm) - 3 (75mm) Ø pipe	1" (25mm)
4 (100mm) - 8" (203mm) Ø pipe	1 1/2" (38mm)

.4 Hot Water and Drain Piping at Handicapped Fixtures

- .1 Armstrong Armaflex 2000 self seal pipe insulation, closed cell elastomeric and flexible, ½" (13mm) thickness. Secure joints with 3M #471 tape. Finish with "Losmoke" PVC vapour barrier jacket and adhere with E.Z. Weld #1600 cement adhesive. Seal all joints with 4" (100mm) wide strip of PVC tape.

PART 3 - EXECUTION

3.1 - GENERAL

- .1 Do not apply insulating materials until equipment to be insulated has been properly cleaned, dried and tested to the satisfaction of the Consultant.
- .2 Apply all insulation, wrapping, vapour barrier, adhesives, coatings and cement in strict accordance with manufacturer's recommendations.
- .3 Do not apply any insulation or finishing when the ambient temperature in the space is less than 50°F. (10°C).

3.2 - INSTALLATION
APPLICATION

- .1 Apply all covering in a neat workmanlike manner to present a clean appearance upon completion of the job.
- .2 Apply all insulation in a manner to facilitate replacing and/or servicing of equipment.
- .3 Make good and refinish cracks, undulations or any other deficiencies occurring in the insulation or vapour barrier.
- .4 On all piping, equipment and ductwork, terminate the insulation neatly around all openings and items requiring periodic access. Insulate separately with removable 16 gauge galvanized sheet steel panels lined with rigid slab insulating materials providing equivalent insulation to that on the adjoining surface.
- .5 Provide metal corners concealed with canvas finish on all exposed rigid duct insulations.
- .6 Do not use staples on vapour barriers.
- .7 Provide the following insulation work:
 1. All new domestic hot water, domestic hot water recirculating and cold water piping, including water meter, accessories, etc.
 2. All new heating supply and return piping.

3. All new exposed domestic hot water drain at each handicapped fixture 1/2" (13mm) pipe insulation.
- .8 On all piping having vapour barrier jacket, the adjoining section of insulation is to be butted firmly together and the longitudinal seams of the vapour jacket to be sealed with vapour barrier adhesive. End joints are to be sealed with 4" (100mm) factory furnished vapour barrier strips.
- .9 Apply insulation over clean dry surfaces butting and adjoining sections firmly together and sealing or taping smoothly over joints.
- .10 Where the pipe hanger is around the insulation, provide a 6" (152 mm) length at equal thickness of moulded thermo - 12 insulation, protected with a saddle, within the pipe support. Coordinate with Contractor installing hangers referenced in Section 15 05 00.
- .11 Extend pipe and duct insulation and covering through sleeves, walls, floors, ceilings, and structural beams, unless indicated otherwise on drawings, or other sections of this specification.
- .12 Cover angles and standing seams which extend beyond face of applied insulation with 1/2" (13mm) thick blanket of glass fibre insulation fitted with factory applied facing of fire resistant kraft paper. Provide 3" (75mm) overlap on each side of angle or seam. Apply strips of 1" (25mm) thick glass fibre insulation board over blanket type insulation, allowing extended portion of angle or seam to project through work.
- .13 Seal holes, corners, and joints with 3" (75mm) wide scrim foil tape immediately following application of insulating materials.

END

PART 1 - GENERAL

- 1.1 - GENERAL .1 Conform to the General Provisions of Section 15 01 00.
- .2 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.
- 1.2 - RELATED WORK SPECIFIED ELSEWHERE .1 Basic Materials and Methods, Section 15 05 00.
- .2 Insulation, Section 15 18 00.
- .3 Plumbing Fixtures and Trim, Section 15 44 00.
- 1.3 - QUALITY ASSURANCE .1 Requirements of Regulatory Agencies:
1. Comply with local bylaws and standards.
 2. Comply with regulations under the Ontario Hydro Electrical Safety Code (latest edition)
 3. Conform to Ontario Building Code (latest edition) containing the Building Code Act, and Ontario Reg. 403/97 including all amendments.
 4. Conform to ACNBC Canadian Plumbing Code current edition.
- 1.4 - SUBMITTALS .1 Submit shop drawings in accordance with Paragraph 1.4 Section 15 01 10 for the following items:
- Plumbing specialties
 - Floor Drains
 - Cleanouts
 - Fixture Carriers
- .2 Submit inspection certificates obtained from local inspection authorities.
- .3 Submit certificates indicating that all required testing has been completed.
- 1.5 - APPROVAL .1 Additional manufacturers wishing to bid products other than the product specified herein, are to submit to the Consultant prior

to Tender close a list of three past installations of products similar to those listed. Complete catalogue data along with deviations from the product specified are to be noted in the submittal to the Consultant. The manufacturer guarantees the proposed substitute product to comply with the product specified and as detailed on the Drawings, unless the deviations are so noted in the submittal for approval.

PART 2 - PRODUCTS

2.1 - FLOOR AND HUB DRAINS

- .1 Flor drains to Ancon FD-200-L, Enpoco, smith SQ4-1753-D-SQ5 or Zurn in 3" (75mm) outlet size. Drain to be complete with trap and ½" (13mm) thick, polished nickel bronze adjustable strainer (match existing size if floor drain is being replaced with new). Where shown as funnel floor drain, provide Ancon FD-100-G, Smith 2005-3591NB, fitted with 9" (225mm) x 4" (100mm) oval funnels. Drains in shower and similar wet areas to have "C" membrane clamp.
- .2 Floor drains in utility, service, storage, etc, areas shall be Ancon FD-100, Enpoco, Smith 2005A or Zurn, 3" (75mm) outlet size, ½" (13 mm) thick nickel bronze strainer.
- .3 Hub drains for planting areas shall be Ancon FD-860, Enpoco, Smith 2675 or Zurn in 3" (75mm) outlet, with satin bronze tub.

2.2 - CLEANOUTS

- .1 All cleanouts to be made with standard TY branch and Y branch and bend using Ancon Model CO-300-S, Enpoco, Smith 4930 or Zurn floor type cleanouts with nickel bronze tops (match existing size if clean out is being replaced with new).
- .2 Cleanouts in finished walls to be concealed with Ancon, Enpoco, Smith 4930 or Zurn floor type cleanouts with nickel bronze tops (match existing size if clean out is being replaced with new).

- .3 In floor with terrazzo finish, use Ancon CO-200-US, Encopo, Smith 4200 or Zurn inlay type cleanout with square recessed nickel bronze access cover and frame.
- .4 In floors with waterproof membrane, use Ancon CO-100-C-S-1, Enpoco, Smith 4020Y or Zurn floor level cleanout with anchoring flange and membrane clamp, satin nickel bronze square top.
- .5 In carpet floors, use Ancon CO-100-CF, Enpoco, Smith or Zurn with carpet clamping flanges.
- .6 Cleanouts to be placed where shown, but wheter shown or not, there is to be a cleanout at the base of every soil stack Ancon model CO-4619(H), Enpoco, Smith 4530 or Zurn. Install cleanout on main building drain just before it leaves the building.
- .7 In walls for urinals, use Ancon Model CO-590-B-RD, Enpoco, smith or Zurn wall cleanout with round polished steel access cover.

2.3 - VENT STACKS

- .1 All new ventstacks to be provided with insulated ventstacks supplied and installed by Division 7. This Division to connect new vents to stacks.

2.4 - SHOCK ABSORBERS

- .1 Shock absorbers shall ben Ancon series Shock Guard all stainless steel construction with nesting bellows precharged with air.
- .2 Enpoco, Smith or Zurn are acceptable manufacuturers.

2.5 - FIXTURE CARRIERS

- .1 Provide Ancon Model CA-411 Lavatory Carrier with epoxy coated cast iron foot support heavy duty rectangular steel uprights, epoxy coated cast iron support, heavy duty rectangular steel uprights, epoxy coated cast iron support arms with integral locking device and leveling screws for all lavatories mounted on stud partition walls or block walls.
- .2 Provide Ancon Model CA-321 Urinal Carrier with epoxy coated cast iron foot support heavy duty rectangular steel structural uprights with

universal steel hanger support plate and bottom bearing plate and plated hardware for all urinals mounted on stud partition walls or block walls.

- .3 Provide Ancon Model CA-101 for single water closet or back water closets epoxy coated cast iron horizontal adjustable fittings face plate and foot supports invertible for siphon jet or blow jet water closets, complete with ABS extension with integral test cap plated hardware and neoprene gaskets, for all wall hung water closets mounted on stud or block walls.
- .4 Provide Ancon Model CA-421 for drinking fountain, epoxy coated cast iron foot support heavy duty rectangular steel structural uprights with universal steel hanger support plate for all drinking fountains mounted on stud partition walls or block walls.
- .5 Enpoco, Smith or Zurn are acceptable manufacturers.

2.6 - DIELECTRIC UNIONS

- .1 Provide wherever pipes of dissimilar metals are joined.
- .2 Provide insulting unions for pipe sizes 2" (50mm) and under and flanges for pipe sizes 2 ½" (65mm) and over.
- .3 Cast brass adapters may be used where approved by the Consultant.
- .4 Provide an isolating separations wherever piping may touch dissimilar metal studs, joists, concrete, etc.

2.7 - BACKFLOW PREVENTERS

- .1 Install backflow preventers as required by the OBC and local regulations. Install and test in accordance with CAN/CSA B64 standards.

PART 3 - EXECUTION

3.1 - PLUMBING
SPECIALTIES

.1 Cleanouts

- .1 Cleanouts to be the same size as a pipe up to 4" (100mm) and not less than 4" (100mm) for larger pipes.
- .2 Provide cleanouts at the end of mains and branches, at changes in directions, in long straight runs, at the base of all soil stacks and rainwater leader and where required by code.
- .3 Use extended cleanouts for piping installed below grade and furred ceiling spaces.
- .4 Co-ordinate final cleanout elevations and configurations with floor finishes.

.2 Floor & Hub Drains

- .1 Reference shall be made the Architectural Drawings for slopes of floors and locations of floor drains with regard to furniture, benches, etc, and on specific placing.
- .2 Provide drains, complete with traps, where shown on drawings.
- .3 Provide trap seal primers and supply lines to each drain. All trap seal primers shall be accessible, provide suitable access doors where necessary.
- .4 Co-ordinate final drain elevation and configuration with floor drains.

.3 Water Hammer Arrestors

- .1 Provide 24" (610mm) air chambers fabricated from Type L, copper tubing with capped end, or water hammer arrestors, at each plumbing fixture or fixture group, and where else necessary to prevent water hammer.

.4 Fixture Carriers

- .1 Fasten carriers securely to the building structure with $\frac{1}{2}$ " (13mm) bolts and necessary anchors.

END

PART 1 - GENERAL

- 1.1 - GENERAL .1 Conform to the General Provisions of Section 15 01 00.
- .2 Provide work under this Section as shown or specified and in accordance with the requirements of the Contract documents.
- 1.2 - QUALITY ASSURANCE .1 Requirements of Regulatory Agencies.
1. Comply with local bylaws and standards.
 2. Comply with regulations under the Ontario Hydro Electrical Safety Code (latest edition).
 3. Conform to Ontario Building Code 1997 containing the Building Code Act, and Ontario Reg. 403/97 including all amendments.
 4. Conform to ACNBC Canadian Plumbing Code current edition.
- 1.3 - SUBMITTALS .1 Submit shop drawings and maintenance manuals for all plumbing fixtures in accordance with Section 15 01 10.
- .2 Submit inspection certificates obtained from local inspection authorities.
- .3 Submit certificates indicating that all required testing has been completed.
- 1.4 - ALTERNATE PRODUCTS .1 Additional manufacturers wishing to bid products, other than the products **specified herein**, are to submit the Consultant prior to Tender close a list of three past installations of products similar to those listed. Complete catalogue data along with deviations from the product specified are to be noted in the submittals to the Consultant. The manufacturer guarantees the proposed substitute product to comply with the product specified and as detailed on the drawings, unless the deviations are so noted in the submittals for approval.

PART 2 - PRODUCTS

2.1 - PLUMBING FIXTURES .1 All plumbing fixtures to be CSA approved, Class A fixtures.

.2 Fixture Reference "**WC-1**": Water closet to be vitreous china, wall-mount, siphon jet, quiet action, low-consumption (4.8 Lpf) closet bowl elongated rim, self draining jet, bolt caps, 1 ½" (38mm) top spud and heavy duty front open front seat less cover with check hinge. All toilets and seats to be white. Provide necessary floor mount carrier to suit wall construction. Provide electronic flush valve with hardwire (24 VAC) sensor on valve c/w manual push-button override. Provide optional 24-hour automatic flush factory set to 'OFF'. Division 15 to provide all necessary 110 to 24VAC transformers to suit all required electronic fixtures. Note: Flush valve to be adjustable to match water closet reduced to flow of 4.8 Lpf.

Manufacturer: American Standard "AFWALL Flow-Wise" Model 3351.001

Flush Valve: Delta Model 81T201HWA

Seat: Olsonite #8C
Centoco or Beneke equivalent

.3 Fixture Reference "**U-1**": Wall-hung, wall outlet, water-less Urinal.

Manufacturer: Sloan WES-1000

Wall Carrier: Ancon Model CA-321
Enpoco, Smith or Zurn equivalent

.4 Fixture Reference "**SD**": Hands-free soap dispenser.

Manufacturer: Delta model DESD-550 w/ 060919A wiring (hardwired)

- .5 Fixture Reference "**LAV-2**": Vanity basin to be solid surface countertop with integral two bowls (see Plumbing Note #24 on Drawing M101).

Provide hardwired sensor faucet with mechanical mixing valve housed in 10"x10" control box with stainless steel cover. Provide vandal proof aerator and offset grid strainer assembly. Provide **offset** chrome plated P-trap with cleanout for all basins. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter.

Manufacturer: DuPont "Corian" Lav Deck
Model 100

Faucet: Delta Model 591T0266

Drain: Powers Crane P-3902
Cambridge Brass, McGuire

Supplies: Powers Crane P4252
Cambridge Brass or McGuire
equivalent

Trap: Powers Crane P4001
Cambridge Brass or McGuire
equivalent

Wall Carrier*: Ancon CA-411
Enpoco, Smith or Zurn
equivalent

*** Note: Mechanical Contractor shall install "heavy duty" lavatory carriers as per the Architectural Details Sheet A202. Provide one carrier support at both ends of the lavatory plus one carrier in-between each bowl.**

- .6 Fixture Reference "**HLAV**": Handicapped lavatory to be vitreous china wall-hung lavatory with integral back, concealed front overflow, rectangular basin, splash lip, soap depressions, mounting brackets. Provide supplies with lockshield stops complete with hard wired sensor faucet with mechanical mixing valve, vandal proof aerator and offset grid strainer assembly. Provide hardwired sensor faucet with mechanical mixing valve

housed in 10"x10" control box with stainless steel cover. Provide vandal proof aerator and offset grid strainer assembly. Provide **offset** chrome plated P-trap with cleanout for all basins. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter. Provide offset chrome plated P-trap with cleanout for all lavatories. Provide vitreous china/knee contact guard. Maximum flow rate of 1.84 GPM (8.35 LPM). Provide 120AC/6VDC power converter.

Manufacturer:

American Standard "Murro" Model 0954.00 w/0059.020 contact guard

Crane "Serena" Model 129V w/ 132 contact guard

Gerber Model 12-464 w/ contact guard

Kohler Model K-2028-4/K-2057 w/ contact guard

Briggs Model 6640/6645 w/ contact guard

Faucet: Delta 591T0266

Drain: Delta 33T290

Supplies: (provide as required)

Trap: Delta 33T311

Wall Carrier:

Ancon CA-411, Enpoco, Smith or Zurn equivalent

PART 3 - EXECUTION

3.1 - WORKMANSHIP

- .1 Remove existing floor finishes.
- .2 Apply tile or backing coats to clean and sound surfaces in accordance with tile adhesive manufacturers' written instructions.
- .3 Fit tile around corners, fitments, fixtures, drawings and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even.
- .4 Maximum surface tolerance 1:800.
- .5 Make joints between tile uniform and approximately 1.5 mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation.
- .6 Lay out tiles so perimeter tiles are minimum $\frac{1}{2}$ size.
- .7 Sound tiles after setting and replace - sounding units to obtain full bond.
- .8 Make internal angles square.
- .9 Install threshold strips and junction of tile flooring and dissimilar materials.
- .10 Clean installed tile surfaces after installation and grouting cured.

3.2 - FLOOR TILE

- .1 Install in accordance with TTMAC details.

3.3 - WALL BASE TILE

- .1 Install trim caps level and straight with butt joints flush. Inside and outside corners shall be mitred with a power mitre saw.
- .2 Install in accordance with TTMAC details.
- .3 Install cut tile edge down toward top edge of wall base. Shall be manufactured edge.

3.4 - WALL TILE .1 Install in accordance with TTMAC details.

3.5 - FLOOR SEALER AND PROTECTIVE COATING .1 Apply in accordance with manufacturers instructions.

END

GREENHOUSE AND PROCESSING CROPS RESEARCH FACILITY - WASHROOM UPGRADES

2585 COUNTY ROAD 20, HARROW, ONTARIO

AGRICULTURE AND AGRI-FOOD CANADA



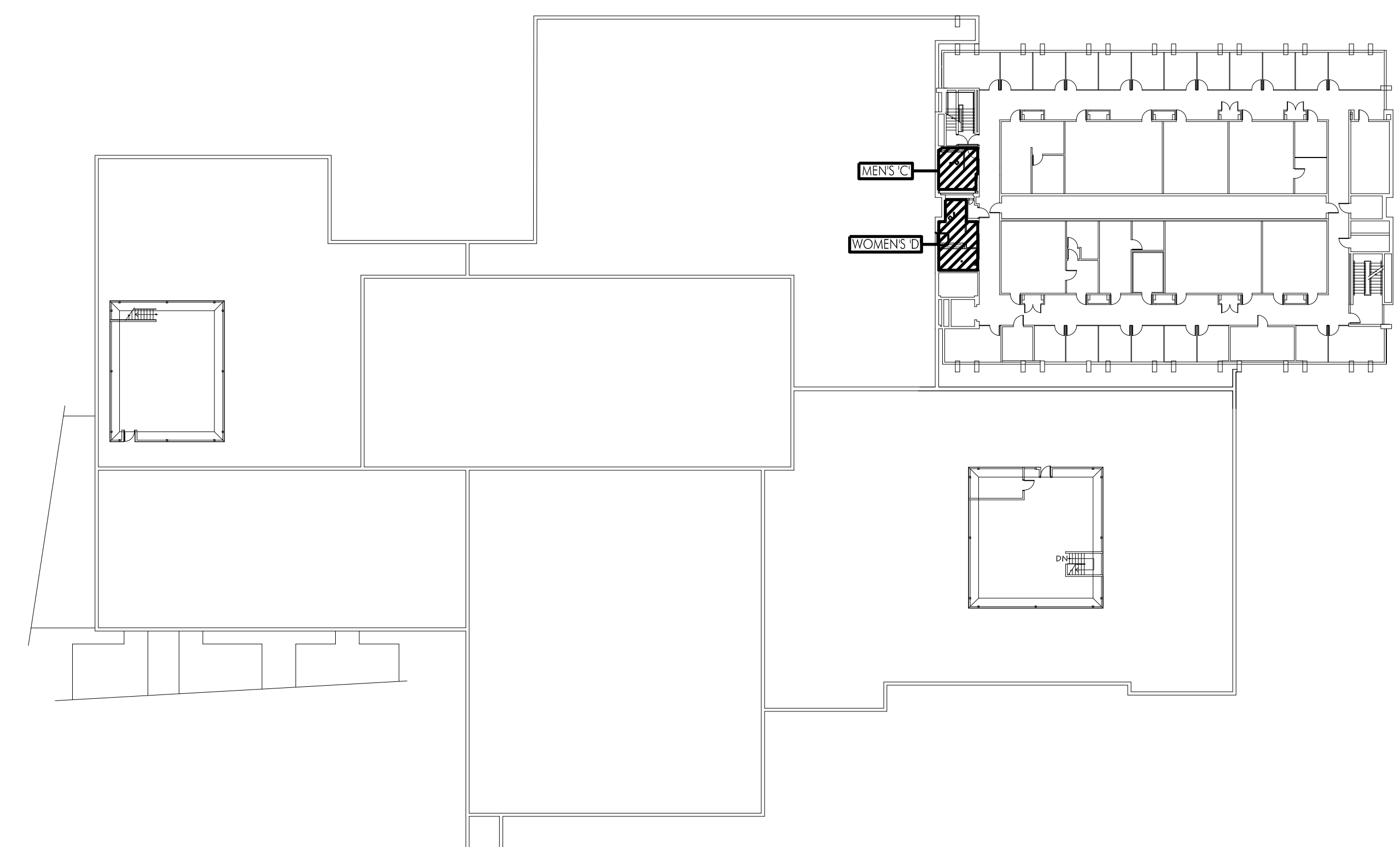
SHEET LEGEND:

- A101 - MEN'S WASHROOM 'C', WOMEN'S WASHROOM 'D' & H/C WASHROOM 'E' - PLANS
- A201 - MEN'S WASHROOM 'C', WOMEN'S WASHROOM 'D' & H/C WASHROOM 'E' - ELEVATIONS AND DETAILS
- A202 - SECTIONS AND DETAILS
- M101 - MEN'S WASHROOM 'C', WOMEN'S WASHROOM 'D' & H/C WASHROOM 'E'

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO BUILDING CODE.
2. ALL WRITTEN DIMENSIONS ARE TO BE FOLLOWED. DO NOT SCALE DRAWINGS. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR BEFORE COMMENCING ANY WORK.
3. BEFORE BEGINNING WORK AT THE SITE, WHERE POSSIBLE, AND THROUGHOUT THE COURSE OF THE WORK, INSPECT AND VERIFY THE LOCATION AND CONDITION OF EVERY ITEM AFFECTED BY THE WORK UNDER THIS CONTRACT AND REPORT DISCREPANCIES TO THE CONSULTANT BEFORE DOING WORK RELATED TO THAT BEING INSPECTED.
4. BEFORE BEGINNING WORK AT THE SITE, INSPECT THE EXISTING BUILDING AND DETERMINE THE EXTENT OF THE EXISTING FINISHES, SPECIALTIES, CASEWORK, EQUIPMENT, AND OTHER ITEMS WHICH MUST BE REMOVED IN ORDER TO PERFORM THE WORK UNDER THIS CONTRACT.

5. THE ARCHITECTURAL DRAWINGS SHOW PRINCIPAL AREAS WHERE WORK MUST BE ACCOMPLISHED UNDER THIS CONTRACT. INCIDENTAL WORK MAY ALSO BE NECESSARY IN AREAS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS DUE TO CHANGES AFFECTING THE MECHANICAL, ELECTRICAL OR OTHER SYSTEMS. SUCH WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS AND ASCERTAIN THE EXTENT OF WORK NEEDED AND DO THAT WORK IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AT NO ADDITIONAL COST.
6. DO NOT DRILL OR CUT EXISTING JOISTS, BEAMS, COLUMNS, OR OTHER STRUCTURAL ELEMENTS UNLESS SPECIFICALLY INDICATED. DRILL SLABS WHERE APPROVED. MAKE OPENINGS OF PROPER SIZE FOR CONDUITS, DUCTS, PIPES AND OTHER ITEMS PASSING THROUGH OPENINGS.
7. REPAIR, PATCH, AND FINISH OR REFINISH AS APPLICABLE, TO MATCH ADJACENT EXISTING FINISHES, THOSE EXISTING SURFACES DAMAGED OR NEWLY EXPOSED AS A RESULT OF PERFORMING THE WORK UNDER THIS CONTRACT.
8. WHERE CUTTING OF EXISTING SURFACES OR REMOVAL OF EXISTING FINISHES IS REQUIRED TO PERFORM THE WORK UNDER THIS CONTRACT, AND NEW FINISH IS NOT INDICATED, FILL RESULTING OPENINGS AND PATCH THE SURFACE AFTER DOING THE WORK, AND FINISH TO MATCH ADJACENT EXISTING SURFACES.

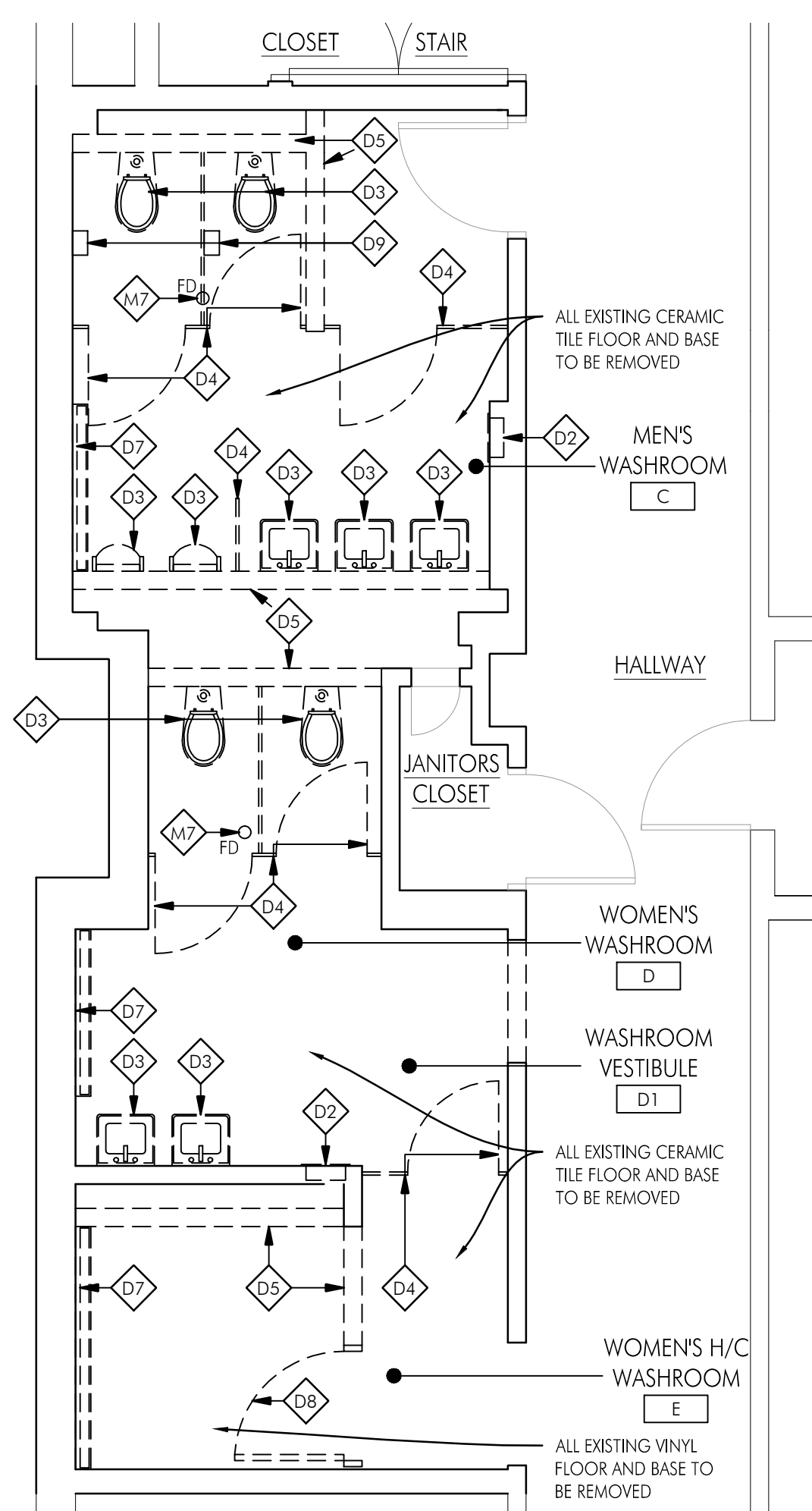


SECOND FLOOR KEY PLAN
SCALE: 1/32" = 1'-0"

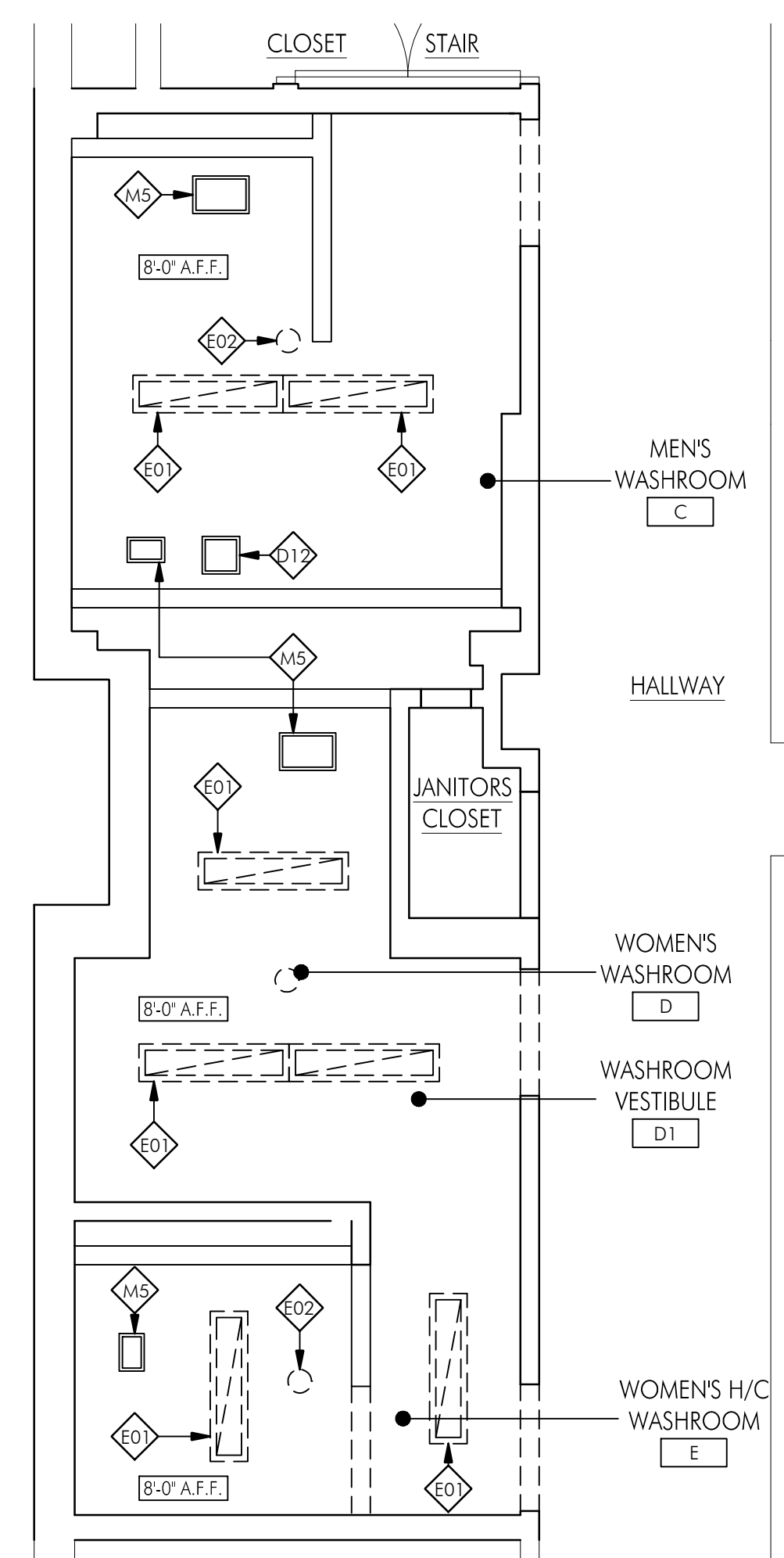
3535 North Service Road East
Windsor, Ontario
N8W5R7
Phone: (519) 966-6750
Fax: (519) 966-6753

 **Glos Associates Inc.**
ARCHITECTURAL + ENGINEERING CONSULTANTS

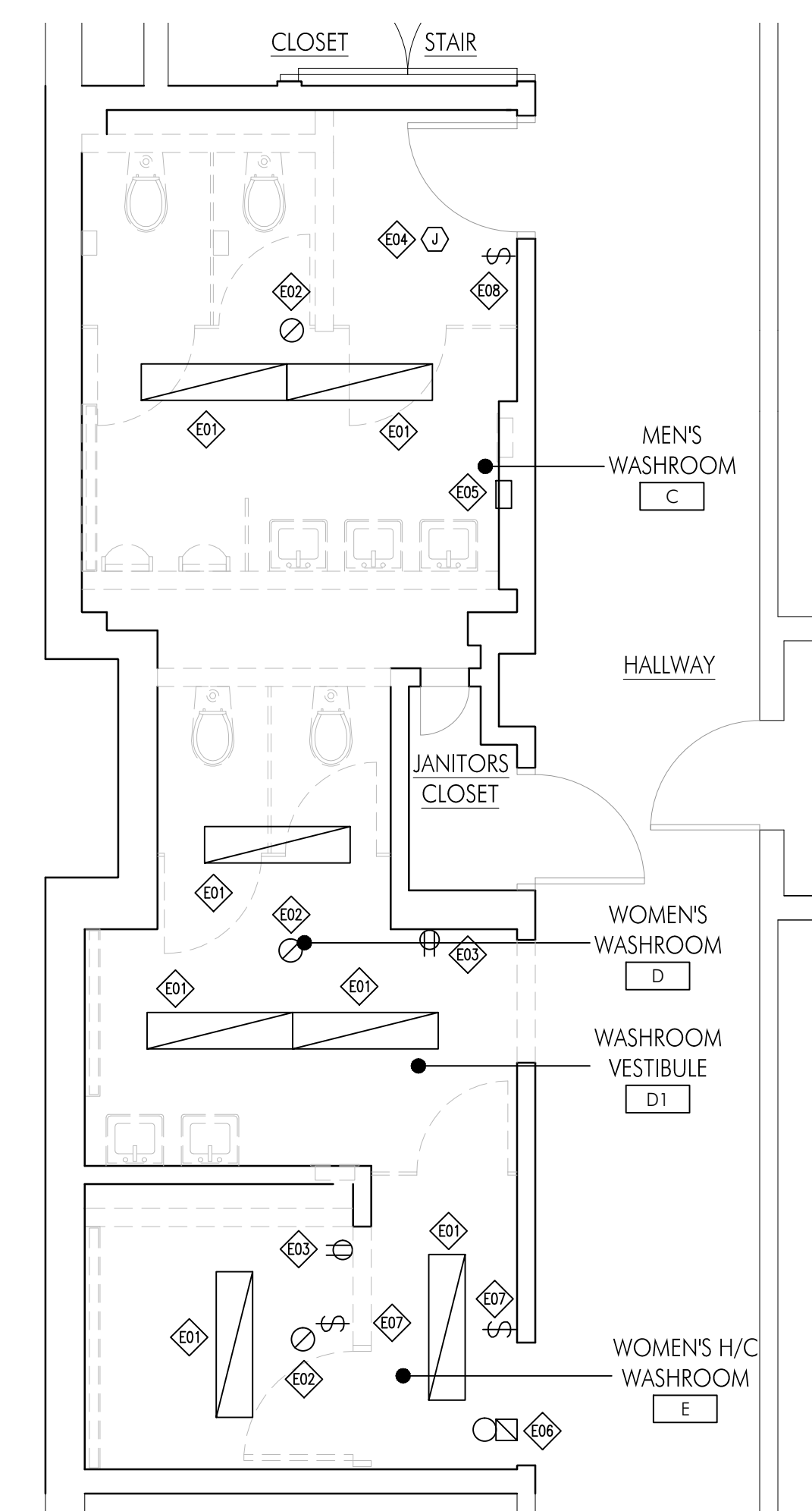
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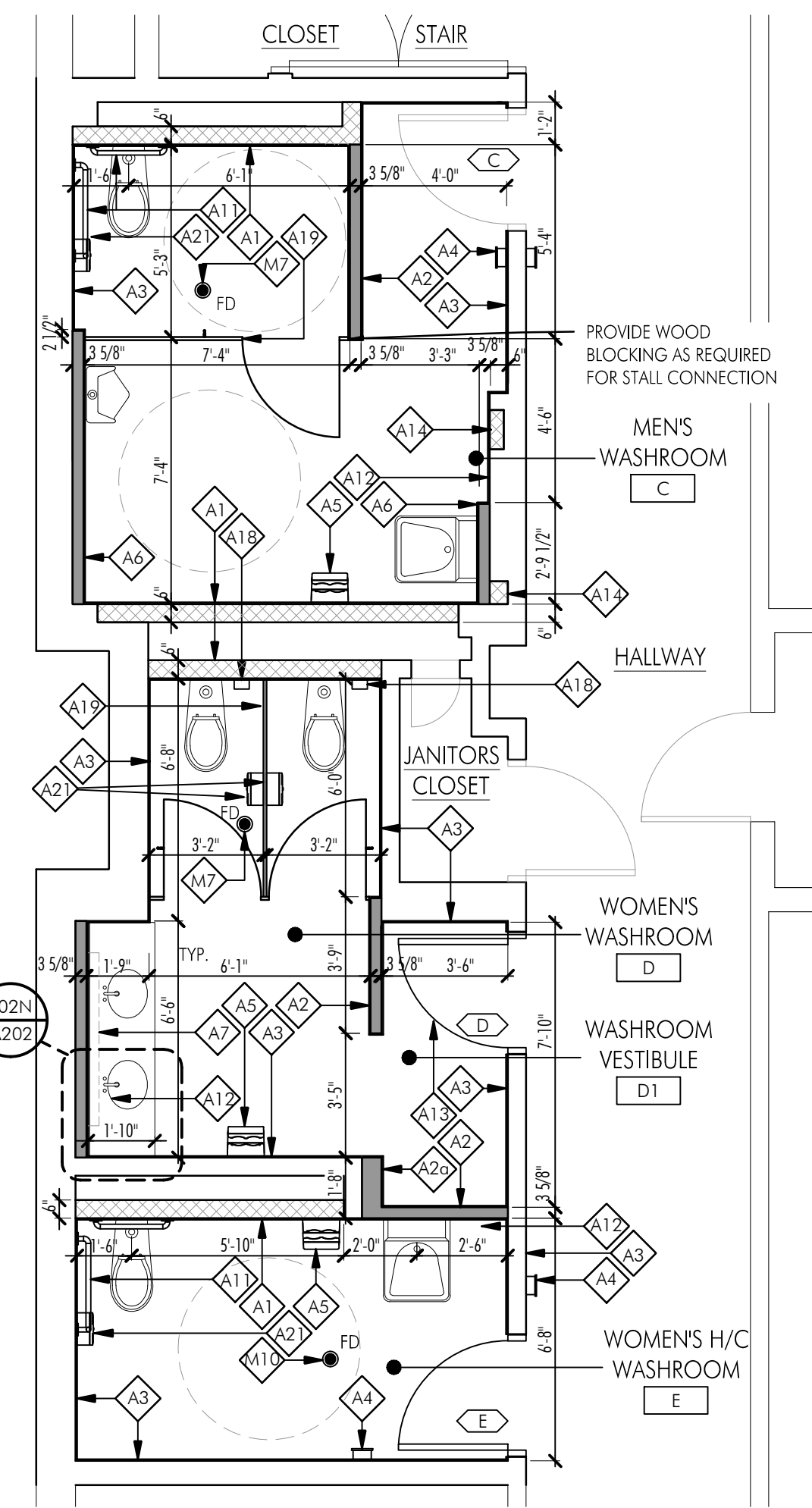
DEMOLITION PLAN
SCALE: 1/4"=1'-0"



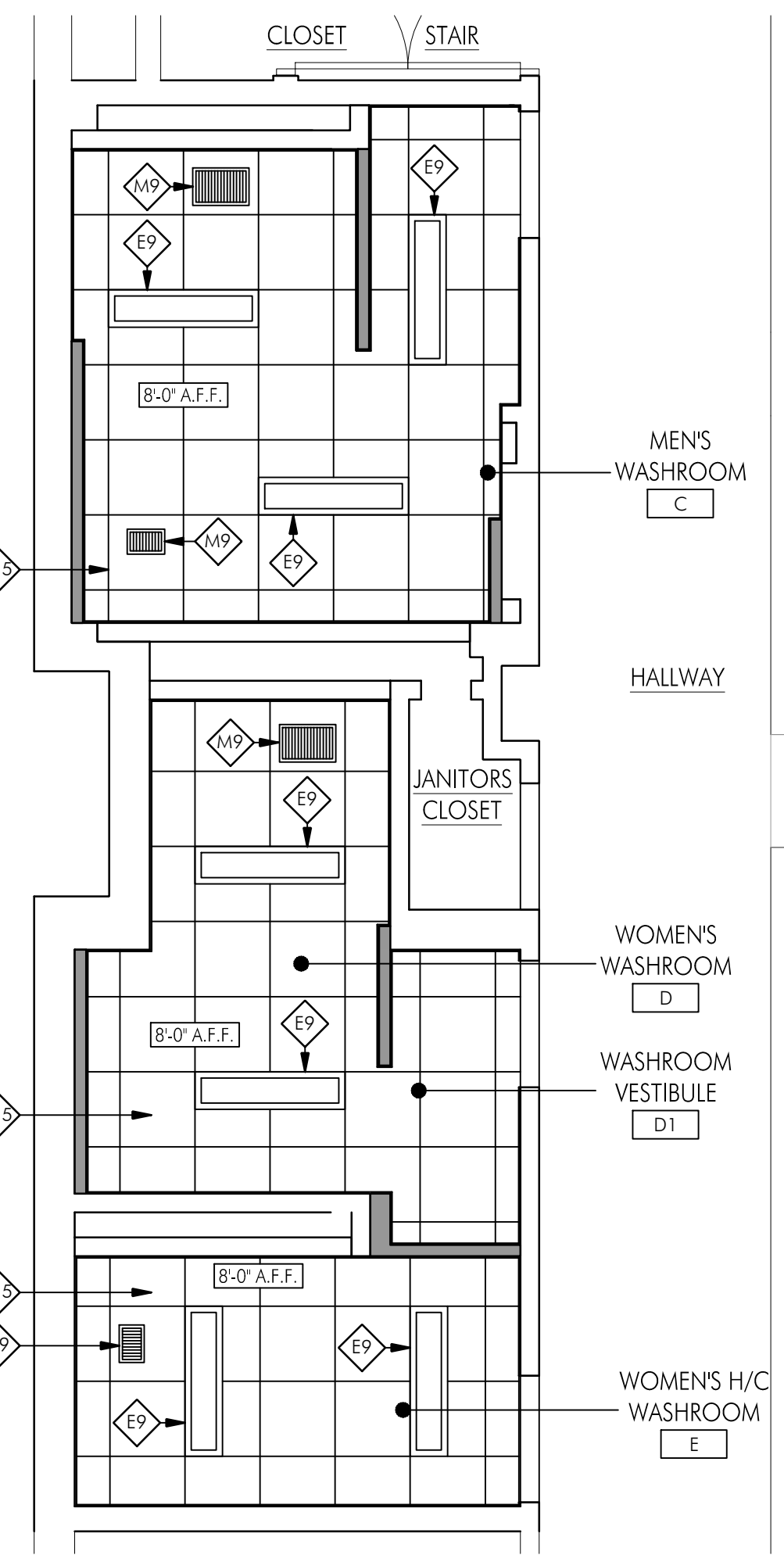
REFLECTED CEILING DEMOLITION PLAN
SCALE: 1/4"=1'-0"



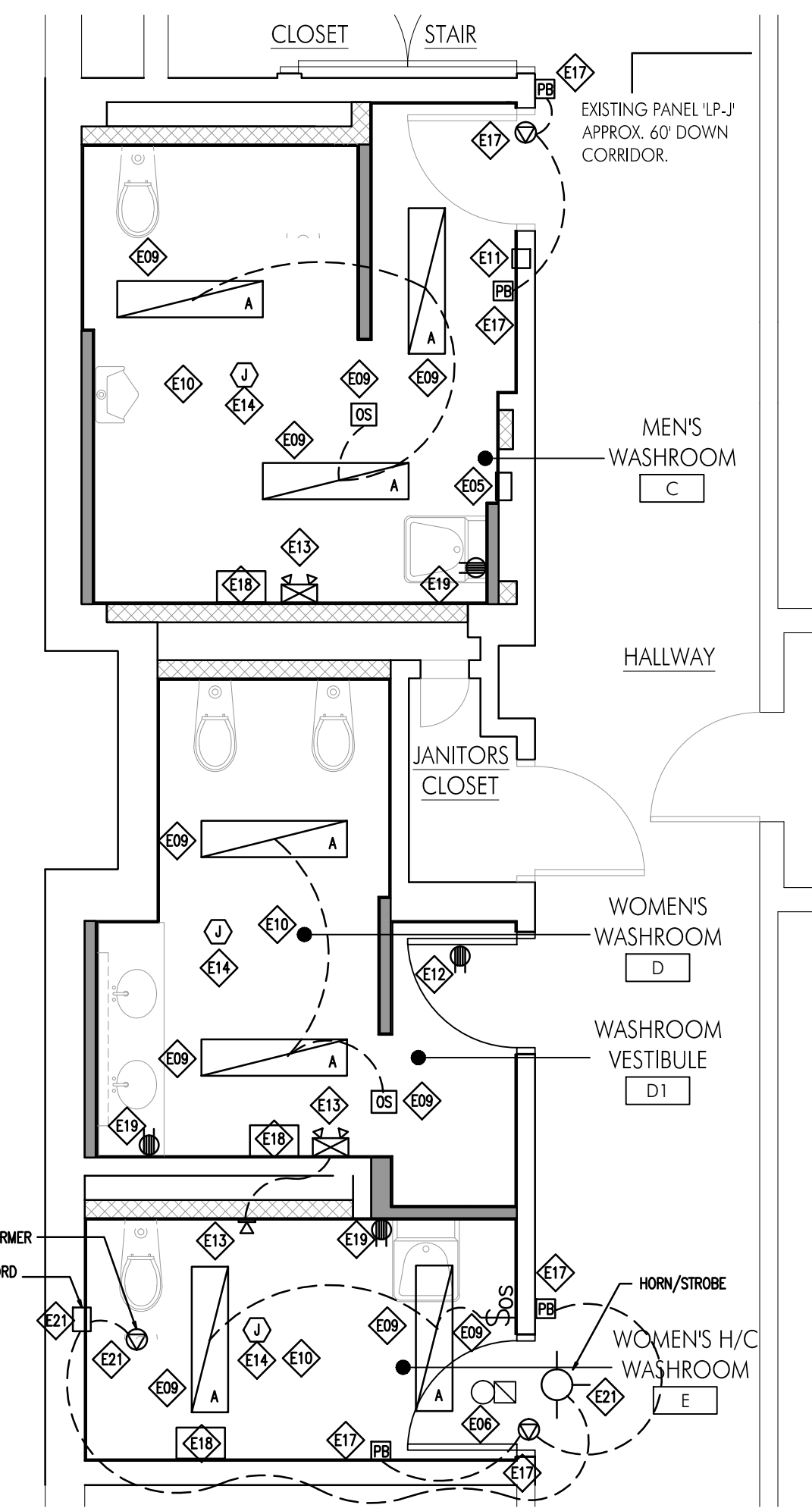
DEMOLITION ELECTRICAL PLAN
SCALE: 1/4"=1'-0"



FLOOR PLAN
SCALE: 1/4"=1'-0"



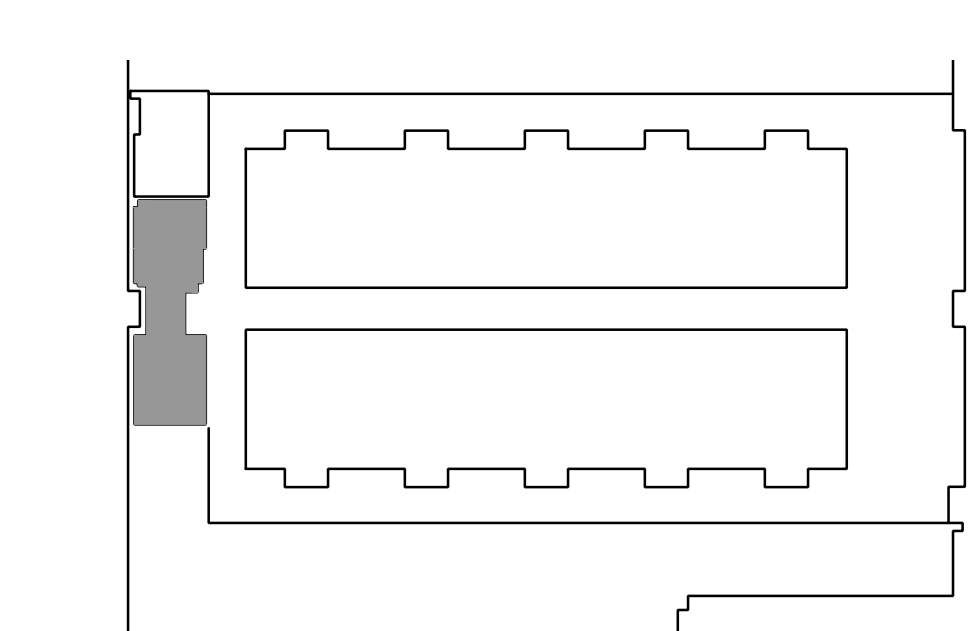
REFLECTED CEILING PLAN
SCALE: 1/4"=1'-0"



ELECTRICAL PLAN
SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

- THIS CONTRACTOR SHALL CARRY OUT INVESTIGATIONS TO ASCERTAIN THE EXISTENCE OF ANY UTILITIES BELOW THE EXISTING CONCRETE FLOOR. DEMOLISH PORTION OF CONCRETE FLOOR WITH CARE SO AS NOT TO DAMAGE ANY EXISTING SERVICES BELOW.
- REMOVE COMPLETE ALL MIRRORS AND ALL ACCESSORIES FOR SOAP, TOILET PAPER, SANITARY PRODUCTS, TOILET SEAT COVERS, PAPER TOWELS, COAT HOOKS AND DOOR STOPS.
- PREPARE ALL EXISTING SURFACES TO REMAIN FOR NEW SUBSTRATE AND/OR FINISHES.
- REMOVE ALL EXISTING ACCESS PANELS COMPLETE.
- ALL EXISTING FLOOR FINISHES TO BE REMOVED AND SURFACE TO BE PREPARED FOR NEW FINISHES.
- ALL EXISTING CEILING FINISHES TO BE REMOVED.
- REMOVE EXISTING PAPER TOWEL DISPENSER AND STAINLESS STEEL COVER PLATE FROM WALL COMPLETE.
- REMOVE EXISTING RECESSED PAPER TOWEL DISPENSER / REFUSE BIN UNIT.
- REMOVE PLUMBING FIXTURE COMPLETE AND LINES CAPPED.
- REMOVE TOILET PARTITION COMPLETE.
- AREA OF EXISTING BLOCK WALL TO BE REMOVED COMPLETE.
- REMOVE EXISTING MILLWORK COMPLETE.
- REMOVE EXISTING RADIATOR COMPLETE.
- REMOVE EXISTING DOOR AND DOOR FRAME COMPLETE.
- REMOVE EXISTING DOUBLE TOILET PAPER DISPENSER.
- REMOVE EXISTING CERAMIC TILE BASE COMPLETE.
- REMOVE EXISTING VINYL BASE COMPLETE.
- EXISTING ACCESS PANEL TO BE REMOVED.
- REMOVE PORTION OF BLOCK WALL FOR INSTALLATION OF NEW DOOR AND FRAME. GENERAL CONTRACTOR TO INVESTIGATE WALL PRIOR TO DEMOLITION TO SEE IF WALL IS LOAD BEARING. REPORT BACK TO ARCHITECT IF WALL IS LOAD BEARING.



SECOND FLOOR KEY PLAN
SCALE: N.T.S.

LEGEND

SYMBOL	DESCRIPTION
\$ \$ \$ \$	120V, SINGLE POLE, THREE WAY, FOUR WAY SWITCH
WALL MOUNT	WALL MOUNT OCCUPANCY SENSOR AS SPECIFIED
120V	120V, 15A DUPLEX RECEPTACLE
120V	120V, 15A GROUND FAULT INTERRUPTING RECEPTACLE
⊖	THERMOSTAT
▽	COMMUNICATION OUTLET - 3/4" CONDUIT
⊕	ELECTRICAL CONNECTION
⊕	SINGLE PHASE, THREE PHASE MOTOR CONNECTION
⊕	INCANDESCENT, H.I.D., OR COMPACT FLOURESCENT FIXTURE
⊕	WALL MOUNTED FIXTURE
⊕	FLOURESCENT FIXTURE
⊕	FLOURESCENT STRIP FIXTURE
⊕	BATTERY BACKUP EMERGENCY LIGHT
⊕	SINGLE/DOUBLE REMOTE EMERGENCY LIGHT
AFF	ABOVE FINISHED FLOOR
EF	EXHAUST FAN
O/C	OVER COUNTER
NL	NIGHT LIGHT
⊕	HEAT DETECTOR (RATE OF RISE)
⊕	SMOKE DETECTOR
⊕	FIRE ALARM HORN
HD	HAND DRYER
OS	OCCUPANCY SENSOR
⊕	JUNCTION BOX

FIXTURE SCHEDULE

A	1x4 RECESSED FLOURESCENT FIXTURE c/w PRISMATIC LENS, HINGED DOOR, 120V ELECTRONIC BALLAST AND TWO T8 LAMPS. PHILIPS: AA-248-UNV-HVIA
⊕	EMERGENCY BATTERY UNIT c/w WHITE FINISH, 6V, MAINTENANCE FREE BATTERY, TWO 9W LAMPS, REMOTE CAPABILITY AND 120/247V INPUT. LUMACELL: RGCC44-2M19
⊕	REMOTE EMERGENCY LIGHTING UNIT c/w WHITE FINISH AND 6V, 9W PAR 18 LAMPS. LUMACELL: MT1-6V9W, MT2-6V9W

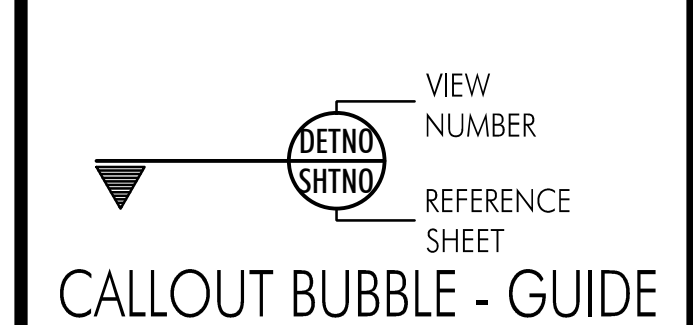
EQUIPMENT SCHEDULE

\$ \$ \$ \$	WALL MOUNTED DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC) OCCUPANCY SENSOR c/w WHITE FINISH WATTSSTOPPER: DW-100-W
⊕	CEILING MOUNT DUAL TECHNOLOGY (PASSIVE INFRARED AND ULTRASONIC) OCCUPANCY SENSOR c/w WHITE FINISH WATTSSTOPPER: DW-100-W

ARCHITECTURAL NOTES:

- ALL DIMENSIONS AND REGULATIONS TO COMPLY WITH THE NATIONAL BUILDING CODE.
- PATCH CONCRETE FLOOR TO MATCH SURROUNDING CONSTRUCTION AS NEEDED WHERE FLOOR FINISH HAS BEEN REMOVED.
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- PATCH EXISTING CEILING TO MATCH SURROUNDING CONSTRUCTION AS NEEDED WHERE GRILLES / PANELS ARE REMOVED & NEW PLUMBING / ELECTRICAL FIXTURES ARE INSTALLED.
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- DIMENSIONS FOR LAV DECKS WILL TAKE PRIORITY OVER PARTITION SIZING, FIELD VERIFY.
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- A1 NEW WALL: 6" MASONRY BLOCK WALL WITH 1/2" PAPERLESS WATER RESISTANT GYPSUM BOARD ON CERAMIC WALL TILE (REFER TO ELEVATION ON SHEET A201).
- A2 NEW WALL: 3-5/8" @ 12" O.C. METAL STUD PARTITION ON 1/2" PAPERLESS WATER RESISTANT GYPSUM ON CERAMIC WALL TILE (BOTH SIDES).
- A2a CERAMIC WALL TILE ON 1/2" PAPERLESS WATER RESISTANT GYPSUM ON 6" METAL STUD ON EXISTING BLOCK WALL CONSTRUCTION (REFER TO ELEVATION ON A201). SHIM EXISTING WALLS AS NEEDED WHERE DIFFERENT WALL FINISHES ARE NOT FLUSH.
- A3 CERAMIC WALL TILE ON 1/2" PAPERLESS WATER RESISTANT GYPSUM - FACED BACHER BOARD ON EXISTING BLOCK WALL CONSTRUCTION (REFER TO ELEVATION ON A201). SHIM EXISTING WALLS AS NEEDED WHERE DIFFERENT WALL FINISHES ARE NOT FLUSH.
- A4 NEW BARRIER FREE DOOR OPERATOR BUTTON.
- A5 NEW HANDS FREE AUTOMATED HAND DRYER.
- A6 NEW CHASE NO. 1 (REFER TO DETAIL ON SHEET A202).
- A7 NEW CHASE NO. 2 (REFER TO DETAIL ON SHEET A202).
- A8 NEW 36" HOLLOW METAL DOOR WITH HOLLOW METAL FRAME IN NEW 3-5/8" METAL STUD PARTITION.
- A9 NEW 20" x 30" FLUSH MOUNTED MIRROR (PROVIDE BLOCKING AS REQUIRED).
- A10 NEW 20" x 30" TILTED BARRIER FREE MIRROR (PROVIDE BLOCKING AS REQUIRED).
- A11 NEW GRAB BARS (REFER TO ELEVATIONS ON SHEET A201). PROVIDE WOOD BLOCKING AS REQUIRED FOR MOUNTING PURPOSES.
- NL NIGHT LIGHT
- A12 NEW HANDS FREE AUTOMATED SOAP DISPENSER, TYPICAL AT EACH SINK. SUPPLIED AND INSTALLED BY MECHANICAL TRADE, REFER TO MECHANICAL DRAWINGS.
- A13 NEW 36" HOLLOW METAL DOOR WITH HOLLOW METAL FRAME IN BLOCK WALL. TOOTH IN BLOCK SURROUNDING DOOR OPENING AS REQUIRED. INSTALL A W6x10 STEEL LINTEL ABOVE DOOR AS REQUIRED.
- A14 PATCH WALL WITH CONCRETE BLOCK AS NEEDED, TOOTH NEW BLOCK INTO EXISTING BLOCK.
- A15 INSTALL NEW 2'-0" x 2'-0" ACOUSTIC CEILING TILE AND GRID AT 8'-0" ABOVE FINISHED FLOOR.
- A16 NEW ELECTRICAL FIXTURES (REFER TO ELECTRICAL PLANS FOR COORDINATION).
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- A18 NEW SANITARY NAPKIN DISPOSAL BIN.
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- A20 NEW 6" METAL STUD @ 16" O.C. PARTITION / PLUMBING WALL WITH 1/2" PAPERLESS WATER RESISTANT GYPSUM BOARD ON ONE SIDE.
- A21 NEW JUMBO TOILET PAPER DISPENSER.
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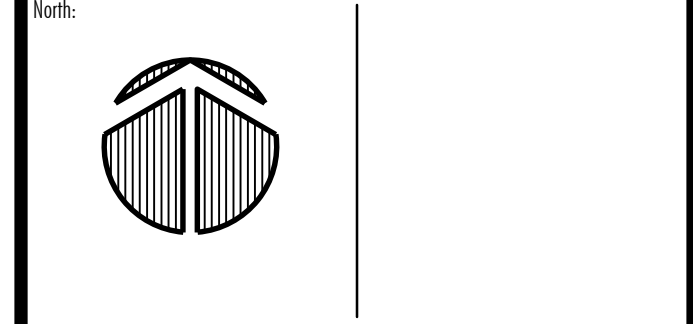
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Glos Associates Inc.
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Fax: (519) 966-6753
www.glossassociates.com



Project Name:
G.P.C.R.F. WASHROOM UPGRADES

HARROW, ONTARIO

Client:
AGRICULTURE AND AGRI-FOOD CANADA

HARROW, ONTARIO

Sheet Title:
MEN'S WASHROOM 'C', WOMEN'S WASHROOM 'D' & H/C WASHROOM 'E' - PLANS -

Design By: RS
Drawn By: AK/RZ
Checked By: RS
Project No:
Sheet No:

A614 A101

ELECTRICAL NOTES:

- E01 DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE. DISPOSE OF AS DIRECTED BY OWNER.
- E02 DISCONNECT EXISTING FIRE DETECTOR. NEW DEVICE TO BE INSTALLED IN NEW CEILING AS INDICATED.
- E03 REMOVE EXISTING RECEPTACLE DURING CONSTRUCTION. NEW RECEPTACLE TO BE INSTALLED IN ITS PLACE.
- E04 SECURE EXISTING FLUSH JUNCTION BOX ABOVE NEW T-BAR CEILING.
- E05 EXISTING FLUSH DEVICE BOX. REMOVE ALL WIRING IF POSSIBLE. BOX TO BE COVERED WITH DRYWALL BY GENERAL.
- E06 EXISTING HORN TO REMAIN.
- E07 REMOVE EXISTING WALL SWITCH. REPLACE WITH NEW WALL MOUNTED OCCUPANCY SENSOR (SEE EQUIPMENT SCHEDULE).
- E08 REMOVE EXISTING WALL SWITCH. MAKE JOINTS IN DEVICE BOX FOR INSTALLATION OF NEW CEILING MOUNTED OCCUPANCY SENSOR.
- E09 SUPPLY AND INSTALL NEW LIGHT FIXTURE CONTROLLED BY OCCUPANCY SENSOR AS SHOWN. CONNECT TO EXISTING LIGHTING CIRCUIT.
- E10 SUPPLY AND INSTALL NEW FIRE DETECTOR IN NEW CEILING. CONNECT TO EXISTING LOCAL FIRE ALARM CIRCUIT. UPON COMPLETION, HAVE FIRE ALARM SYSTEM VERIFIED BY CERTIFIED TECHNICIAN.
- E11 SUPPLY AND INSTALL BLANK COVER PLATE OVER DEVICE BOX (FORMERLY LIGHT SWITCH - SEE NOTE: E08).
- E12 SUPPLY AND INSTALL NEW RECEPTACLE IN PLACE OF PREVIOUS RECEPTACLE (PROVIDE GFI WHERE INDICATED).
- E13 SUPPLY AND INSTALL EMERG. LIGHTS AS SHOWN. CONNECT TO LOCAL LIGHT CIRCUIT. FEED REMOTE EMERG LIGHTING FROM BATTERY UNIT AS INDICATED.
- E14 PROVIDE 120V CIRCUIT IN JUNCTION BOX IN ACCESSIBLE CEILING SPACE FOR LOW VOLTAGE WIRING TO PLUMBING FIXTURES BY MECHANICAL. CONNECT TO NEAREST CIRCUIT WITH CAPACITY.
- E15 DEVICES (RECEPTACLES, SWITCHES, ETC.) TO BE WHITE DECORA STYLE.

MECHANICAL NOTES:

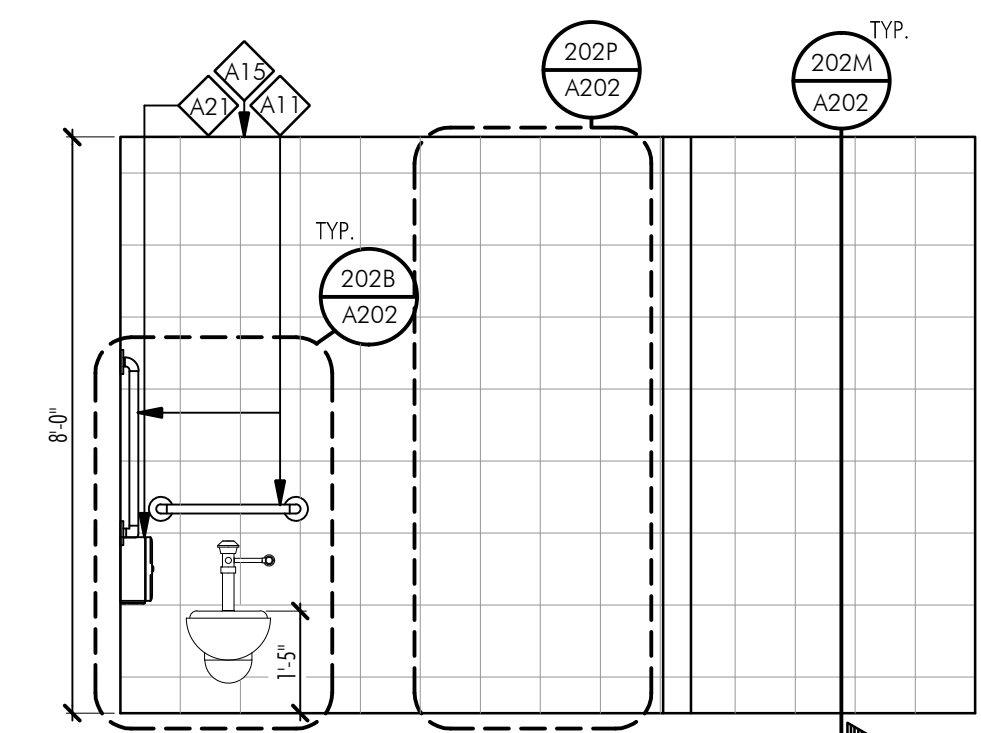
- M01 REUSE EXISTING CIRCUITS WHERE POSSIBLE. WHERE NEW CIRCUITS ARE REQUIRED, PROVIDE FROM EXISTING BREAKER PANEL. PROVIDE NEW BREAKER AS REQUIRED.
- M02 PROVIDE 120V CONNECTION TO NEW DOOR OPERATORS C/W ROUGH-IN FOR PUSH BUTTONS. PROVIDE NEW CIRCUIT FROM PANEL LP-1 TO FEED OPERATORS. ALL WIRING TO BE CONCEALED IN WALLS AND CEILING SPACES. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
- M03 SUPPLY AND INSTALL HAND DRYER (VERIFY LOCATION WITH ARCHITECT). PROVIDE NEW DEDICATED CIRCUIT. HAND DRYER TO BE 120V, 1500W, TOUCHLESS EXTREMEAR: GXT9-M
- M04 REC. UNDER COUNTER FOR SOAP DISP. CONNECT TO NEAREST CIRCUIT.
- M05 DISCONNECT AND REMOVE EXISTING RECEPTACLE IN WALL BEING REMOVED. RE-ROUTE EXISTING WIRING AS REQUIRED TO FEED DOWNSTREAM DEVICES.
- M06 SUPPLY AND INSTALL CALL FOR ASSISTANCE KIT IN ACCESSIBLE WASHROOM AS SHOWN. KIT TO BE COMPLETE WITH WALL MOUNT PULL CORD SWITCH, HORN/STROBE AND 120/24V TRANSFORMER. INSTALL TRANSFORMER IN JUNCTION BOX IN CEILING SPACE. WIRE THROUGH PULL CORD TO HORN/STROBE (WALL MOUNTED ABOVE DOOR OUTSIDE OF ROOM). KIT TO BE EQUAL TO EDWARDS #633R-GS. COORDINATE EXACT LOCATION OF DEVICES WITH GENERAL CONTRACTOR.
- M07 INSTALL NEW URINAL. RE-WORK EXISTING DRAIN PIPES AS REQUIRED TO SUIT NEW WATERLESS URINAL. SEE MECHANICAL DRAWINGS FOR PLANS FOR REWORK OF SANITARY DRAINAGE PIPING.
- M08 NEW SOUNDSURFACE (TERREON) LAV DECK c/w INTEGRAL BOWL. LAV DECK SUPPLIED BY MECH TRADE & INSTALLED BY GENERAL TRADES. REWORK EXISTING DRAIN PIPES AS REQUIRED TO SUIT NEW SINKS. SEE MECHANICAL DRAWINGS FOR LAV DECK SPECIFICATIONS AND FOR REWORK OF SANITARY, C.W. AND H.W. SUPPLY PIPING.
- M09 INSTALL NEW WALL HUNG SINK c/w INSULATED PIPE. SANITARY TO BE CONNECTED TO NEAREST SANITARY STACK. COLD AND HOT WATER PIPING TO BE FEED FROM NEAREST SUPPLY PIPING.
- M10 GRILLE REPLACEMENT: REMOVE EXISTING GRILLE AND INSTALL NEW ACOUSTIC CEILING TILES WILL BE INSTALLED IN PLACE OF THE GYPSUM BOARD CEILING. THEREFORE, THE SHEET METAL CONTRACTOR WILL NEED TO REWORK THE EXISTING GRILLE BRANCH, AS NEEDED TO SUIT THE NEW ACOUSTIC CEILING SYSTEM. PAINT COLOR TO BE SELECTED BY CONSULTANT. FIELD VERIFY SIZES SHOWN ON THE DRAWINGS.
- M11 REMOVE EXISTING F.D./C.O.
- M12 F.D./C.O. REPLACEMENT: INSTALL NEW F.D./C.O. IN EXISTING LOCATION.
- M13 RADIATOR REPAIR/REMOVAL: REMOVE EXISTING RADIATOR COVER, FINNED ELEMENT AND PIPING COMPLETE.
- M14 INSTALL NEW MECHANICAL GRILLES. SIZE TO MATCH EXISTING.
- M15 INSTALL NEW FLOOR DRAIN (GENERAL TRADES TO CORE DRILL REQUIRED NEW FLOOR OPENING).

MECHANICAL NOTES:

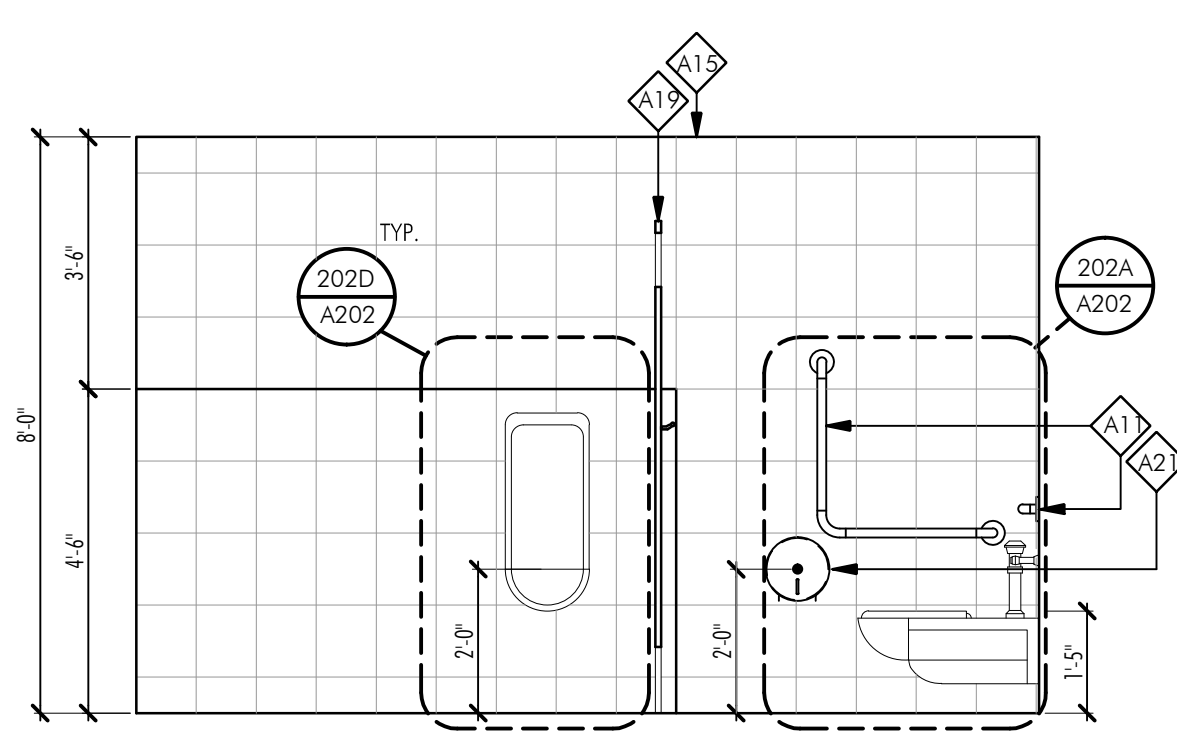
- WHEN EXISTING PIPING IS BEING ABANDONED, CAP DRAIN PIPES BEHIND WALL LINE. REMOVE ALL ACCESSIBLE C.W. AND/OR H.W. SUPPLY PIPING TO NEAREST ACTIVE BRANCH OR MAIN.
- CONTRACTOR SHALL FIELD VERIFY SIZES SHOWN ON THE DRAWINGS FOR EXHAUST GRILLES AND RADIATORS BEFORE ORDERING NEW EQUIPMENT.
- BEFORE COMMENCING ANY WORK, THE PLUMBING TRADES SHALL ESTABLISH LOCATIONS OF WATER SUPPLY & SANITARY DRAIN LINES FOR EACH WASHROOM BEING RENOVATED AND NOTIFY CONSULTANT OF HIS FINDINGS. GENERALLY, THE CONTRACTOR SHALL CONNECT TO EXISTING COLD AND HOT WATER LINES THAT CURRENTLY FEED THE EXISTING FIXTURES IN EACH WASHROOM. THE CONTRACTORS ARE TO FIELD VERIFY EXISTING MAIN SIZES AND DETERMINE IF THE SIZES ARE BIG ENOUGH TO SERVICE THE NEW WASHROOM FIXTURES.
- INSTALL NEW WATER CLOSET. REWORK EXISTING DRAIN PIPES AS REQUIRED TO SUIT NEW WATER CLOSET. SEE MECHANICAL DRAWINGS FOR PLANS FOR REWORK OF SANITARY AND COLD WATER SUPPLY PIPING.

MECHANICAL NOTES:

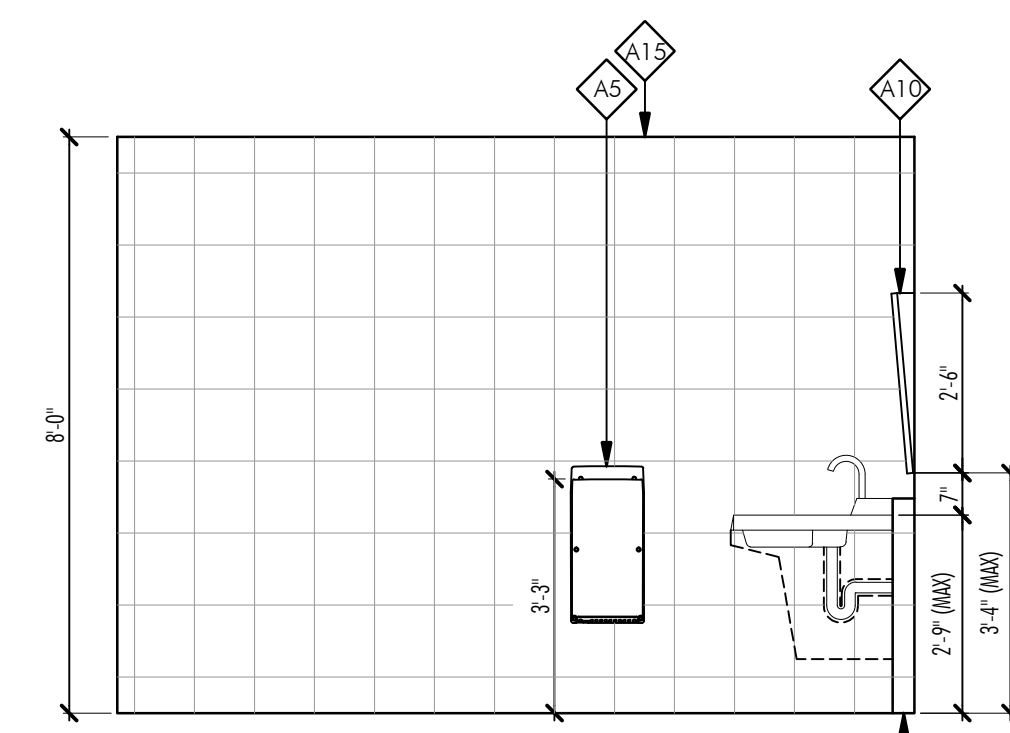
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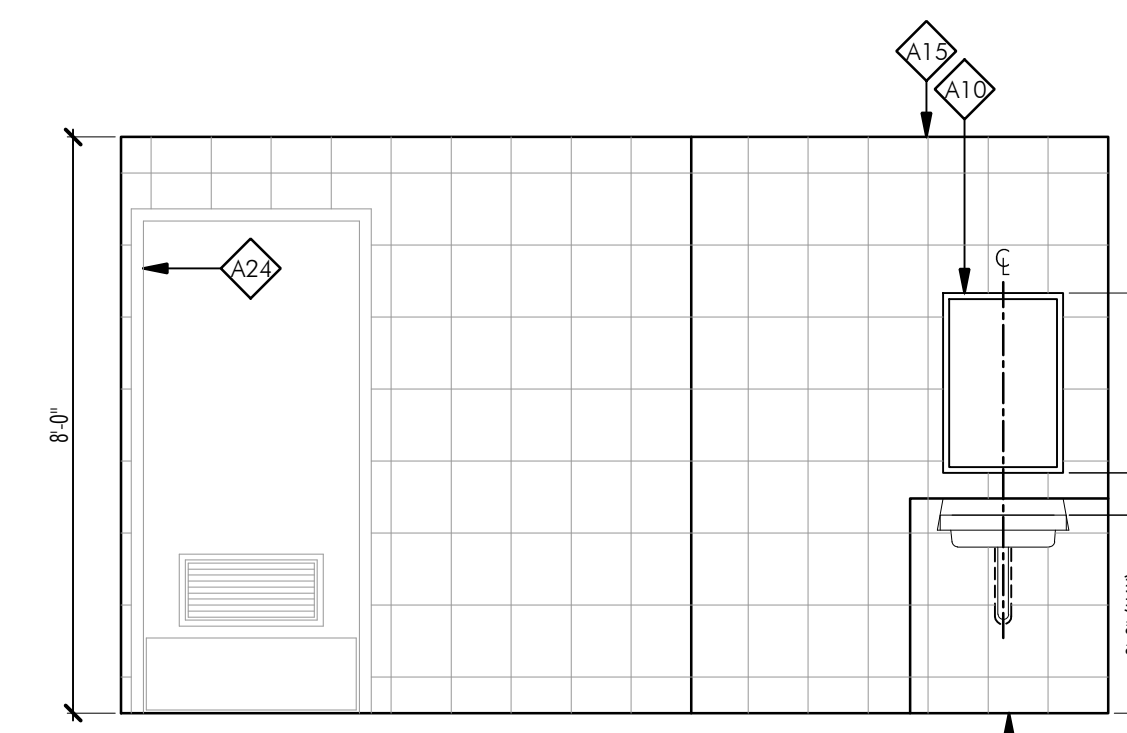
MENS 'C' - NORTH
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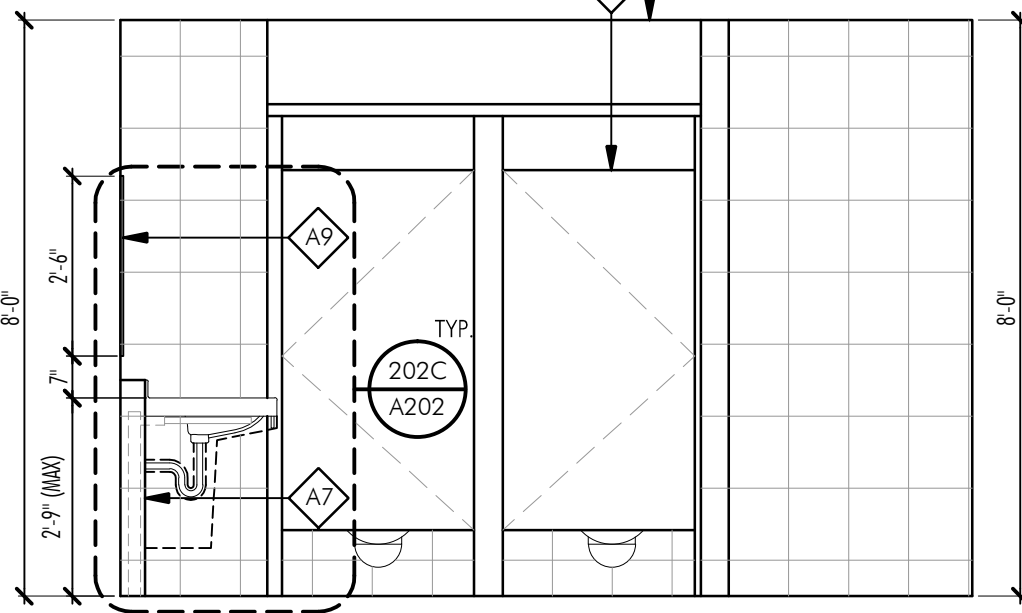
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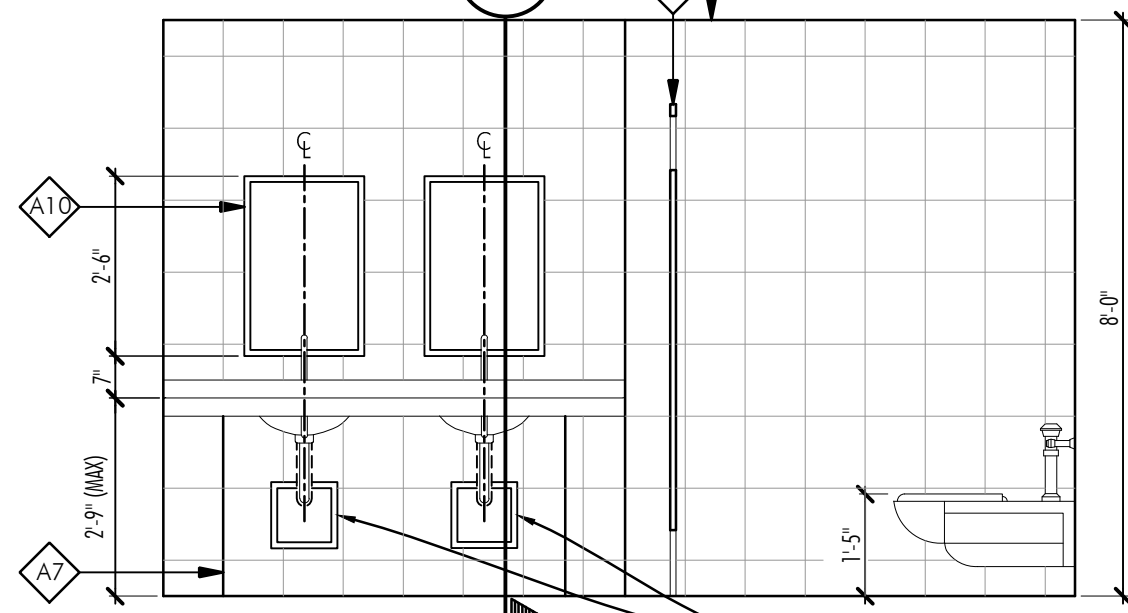
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SCALE: 3/8"=1'-0"



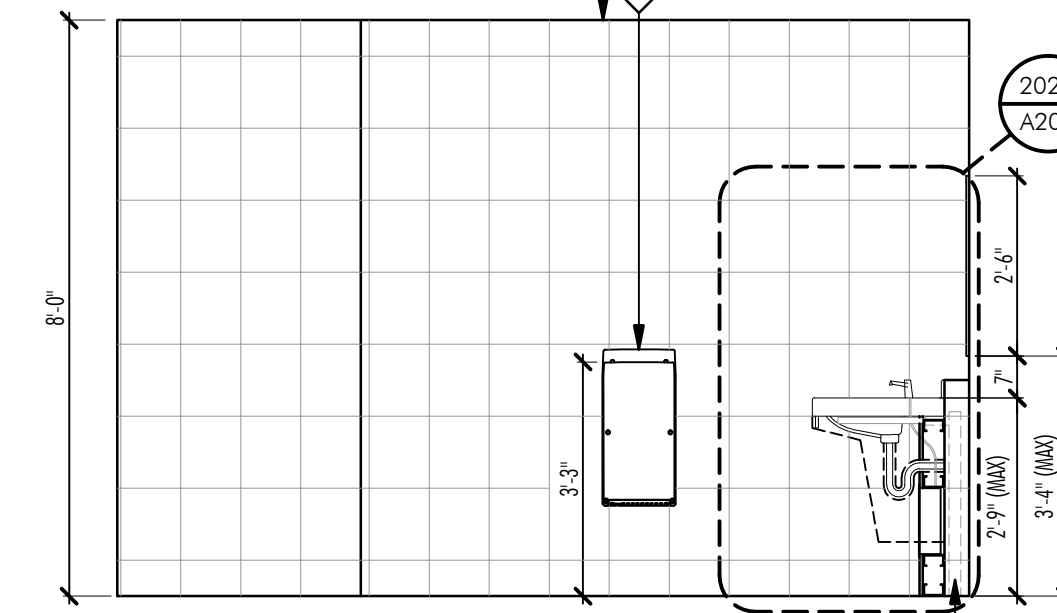
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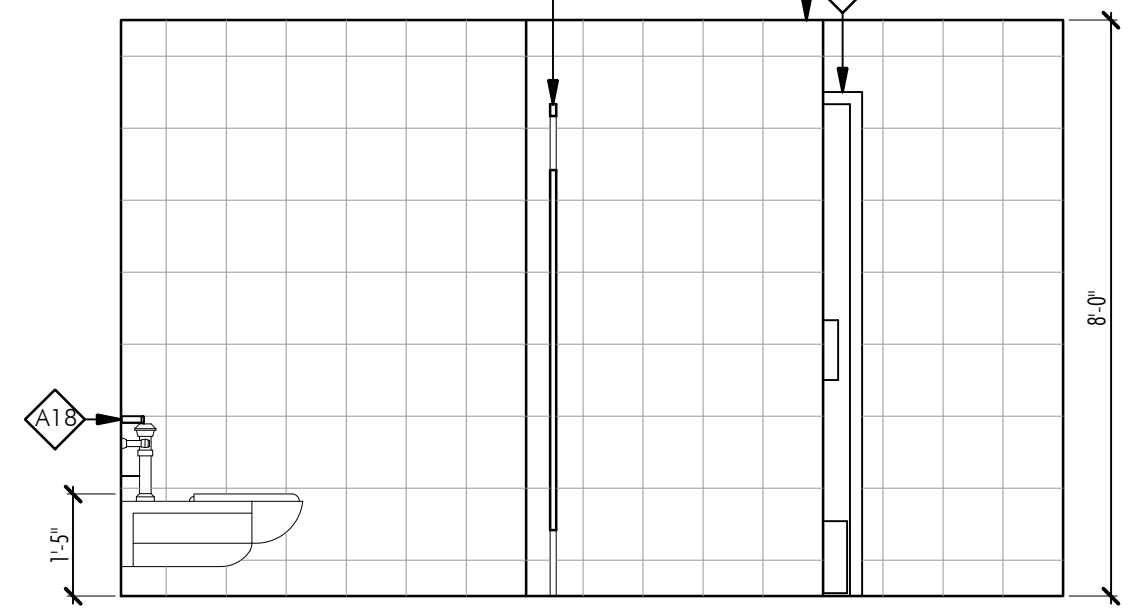
WOMENS 'D' - NORTH
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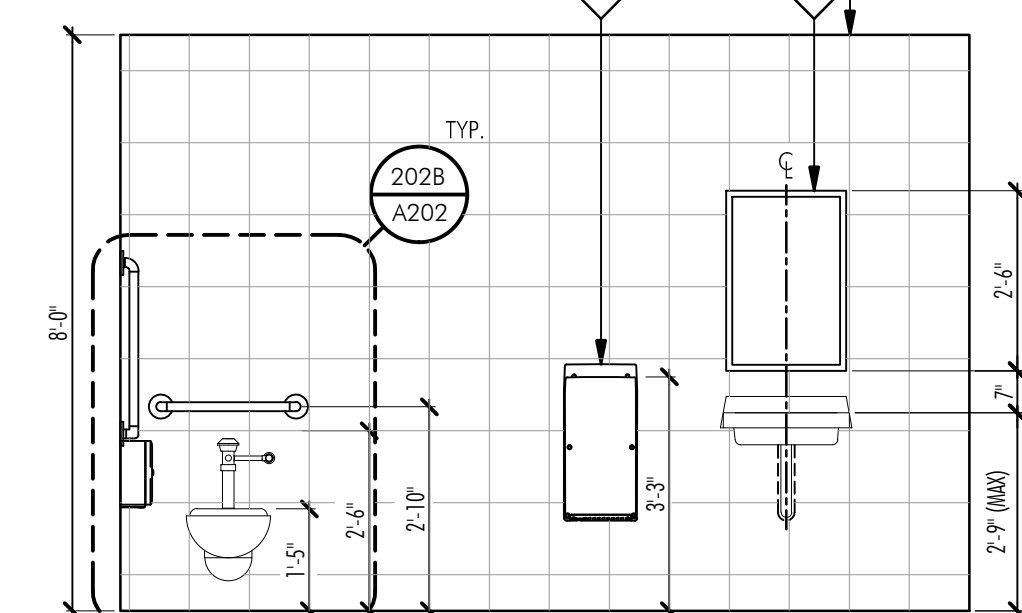
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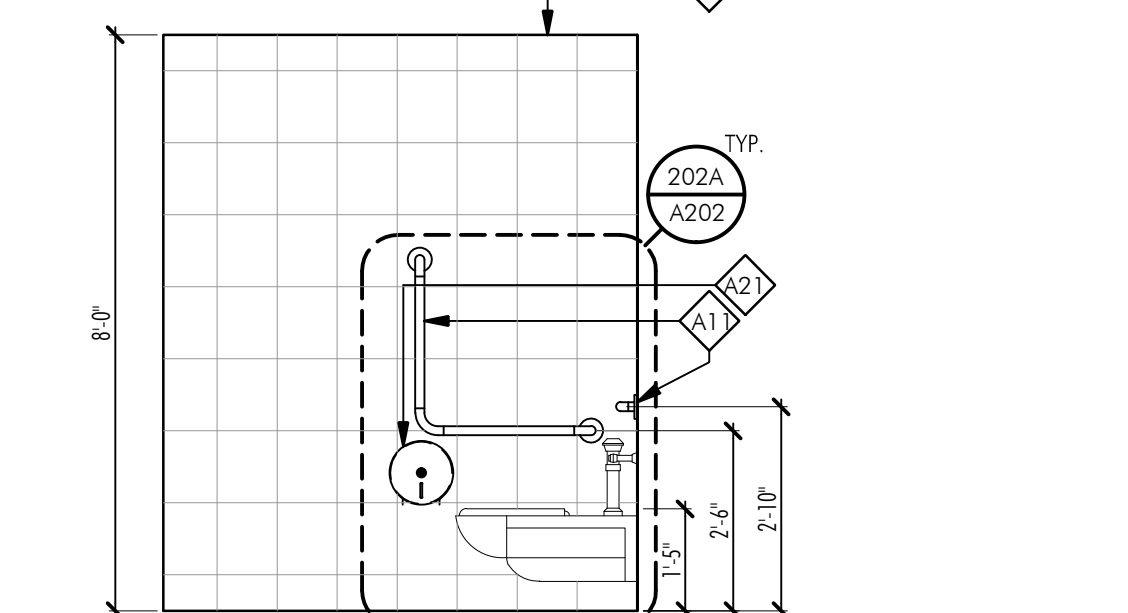
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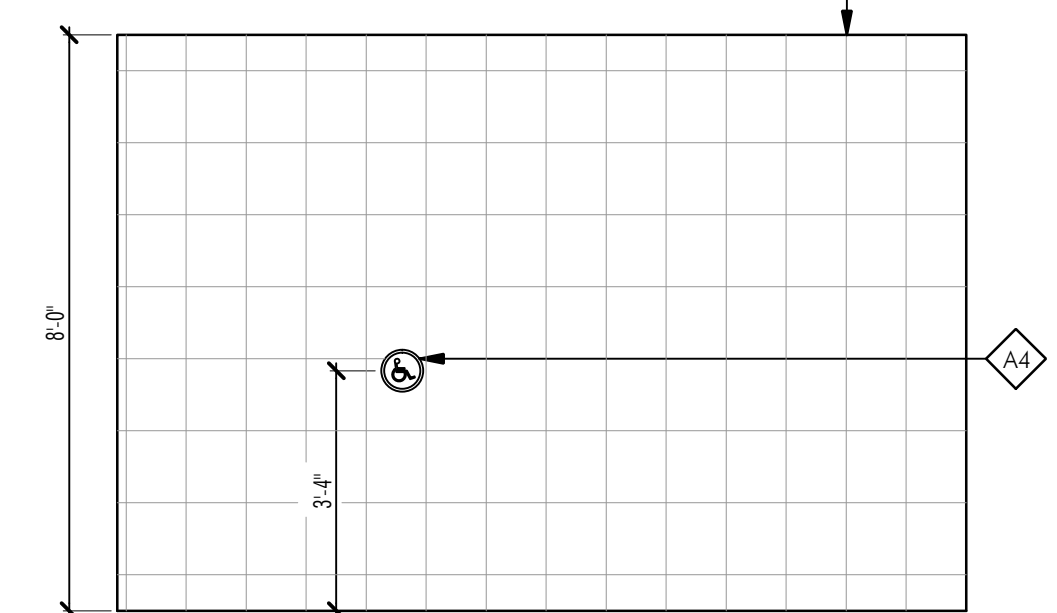
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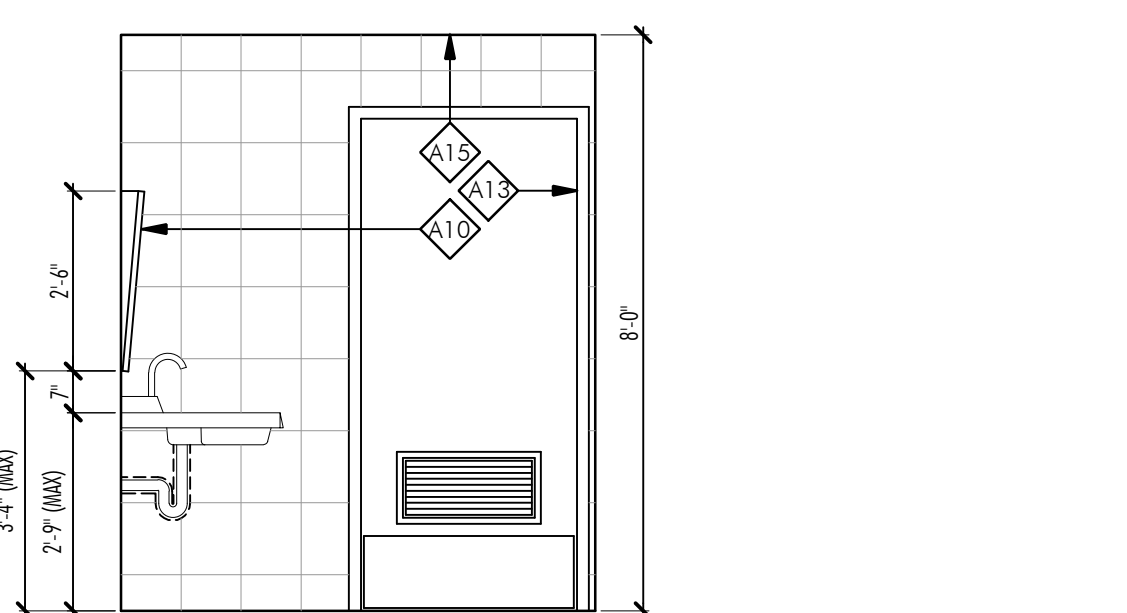
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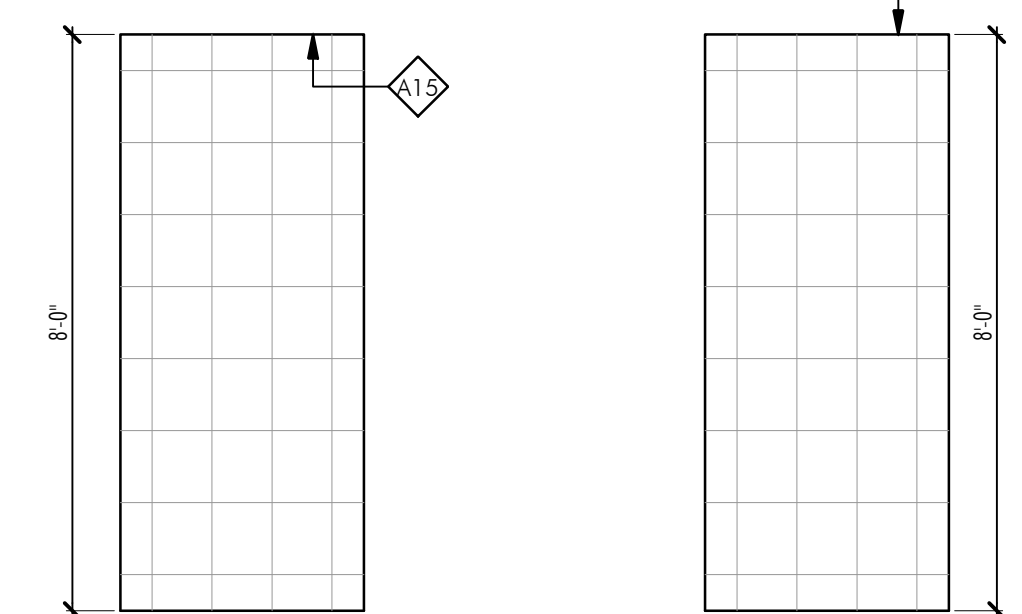
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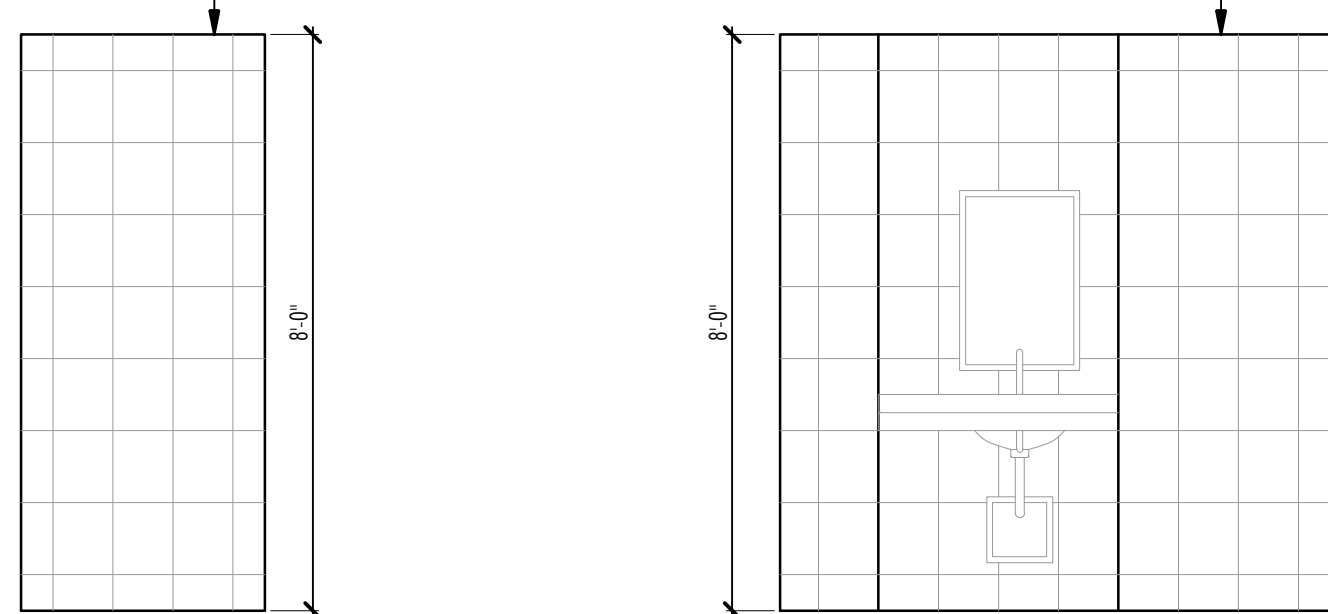
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SCALE: 3/8"=1'-0"



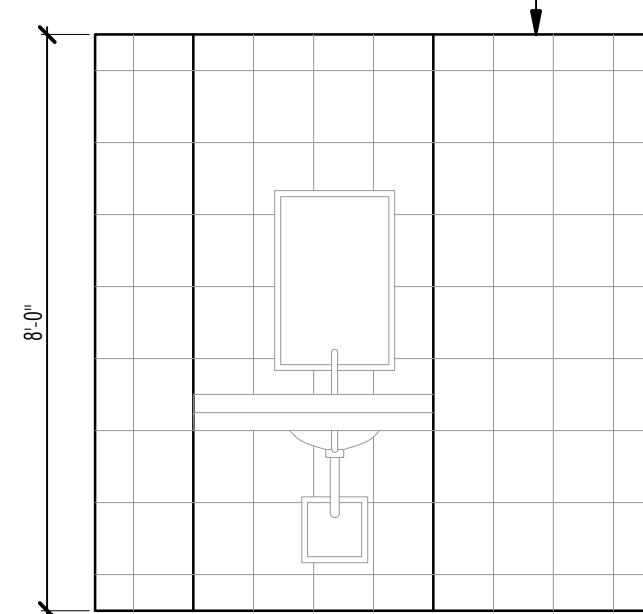
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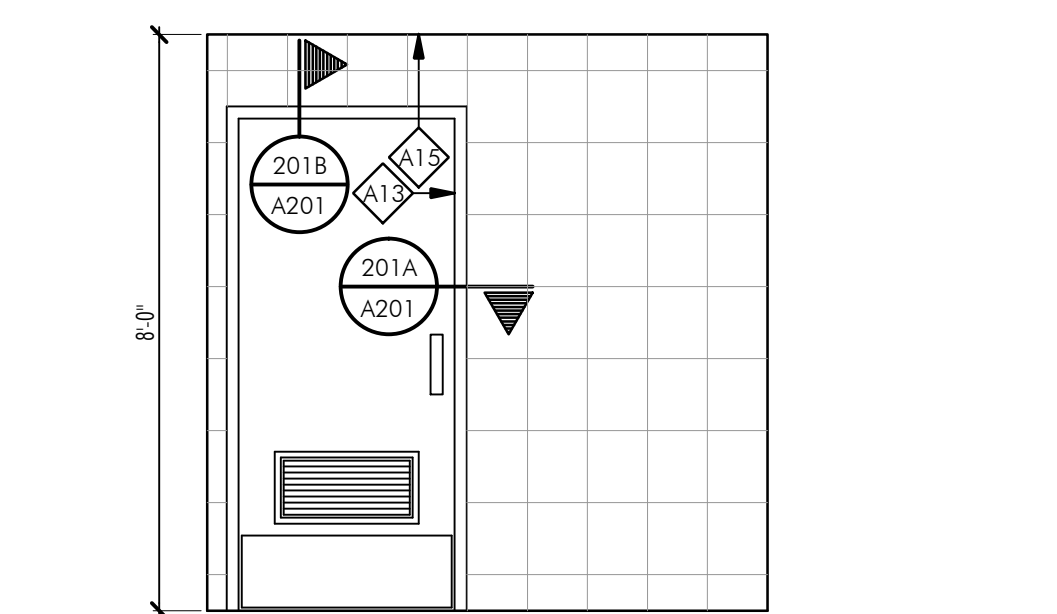
WOMENS 'D1' VEST. - NORTH
SCALE: 3/8"=1'-0"



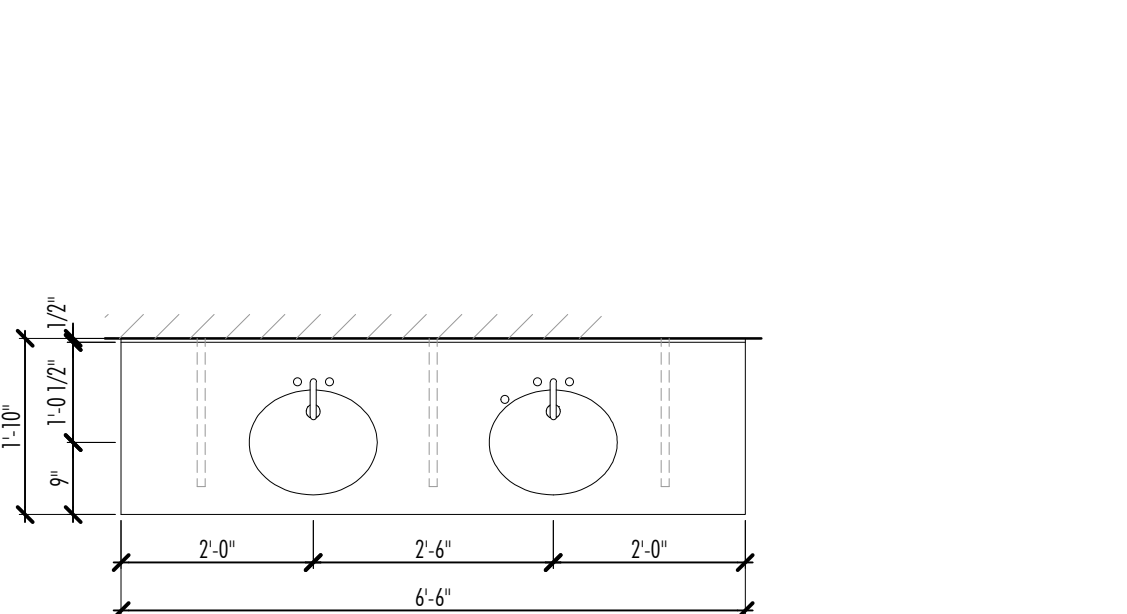
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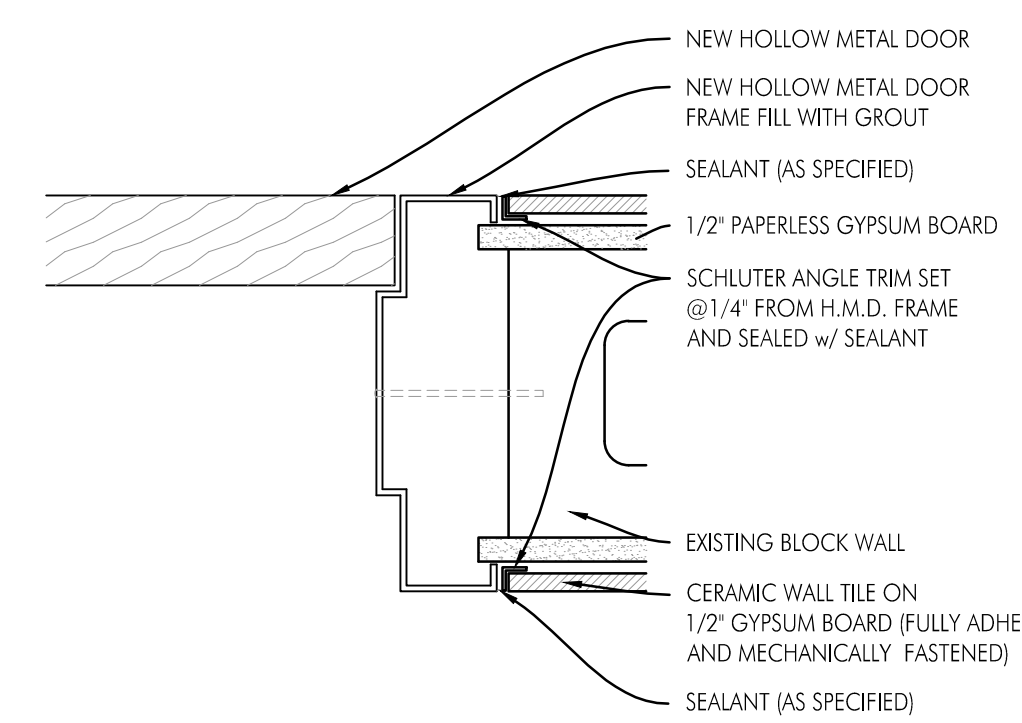
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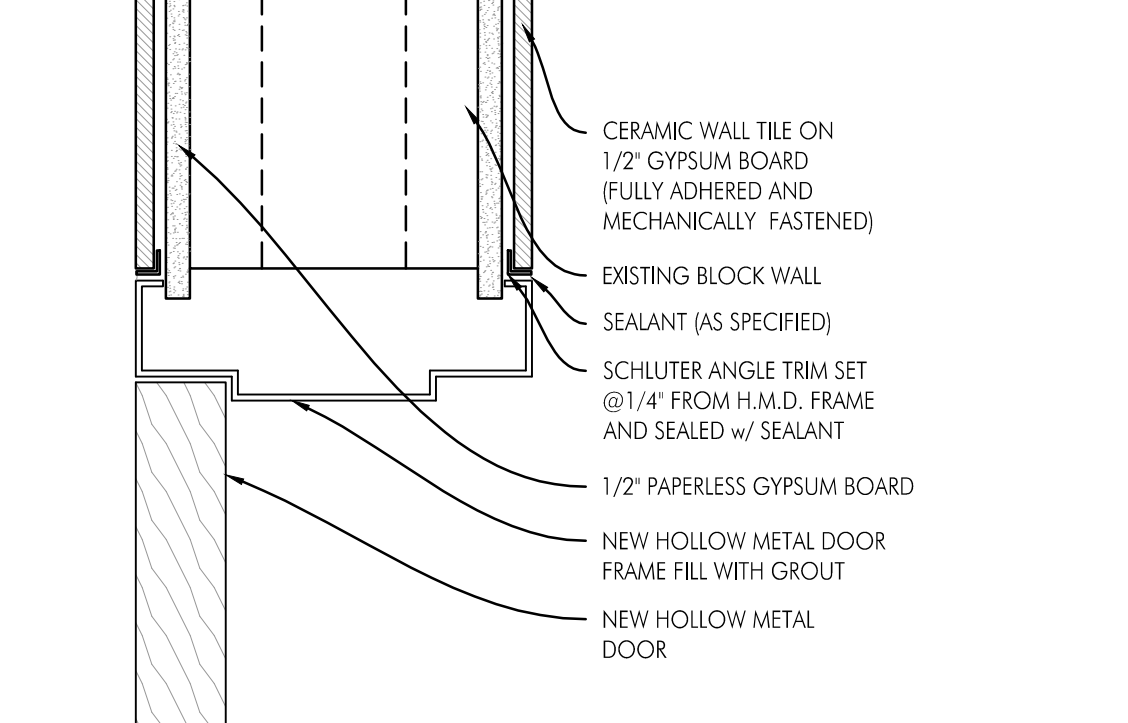
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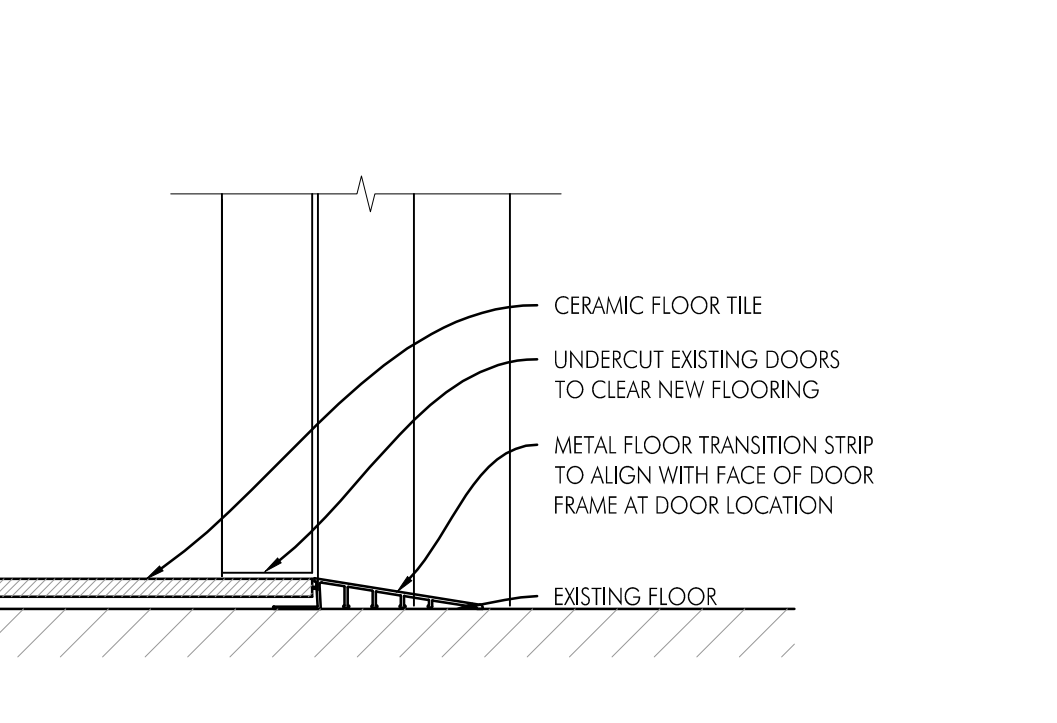
TYP. DOUBLE LAVATORY UNIT
SCALE: 1/2"=1'-0"



201A TYP. DOOR JAMB DETAIL
SCALE: 3"=1'-0"



201B TYP. DOOR HEAD DETAIL
SCALE: 3"=1'-0"



DOOR THRESHOLD DETAIL
SCALE: 3"=1'-0"

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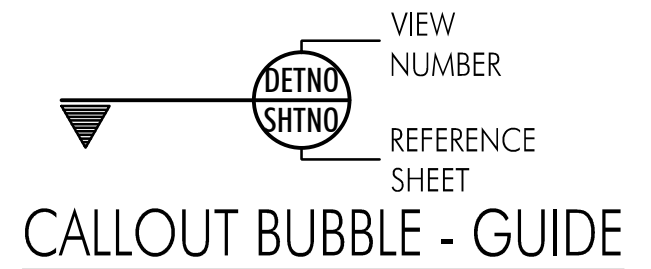
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No.	Issued for:	Date:	By:

Glos Associates Inc.
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North:
Consultant:
Project Name:

G.P.C.R.F. WASHROOM UPGRADES

HARROW, ONTARIO

Client:
AGRICULTURE AND AGRI-FOOD CANADA

HARROW, ONTARIO

Sheet Title:
MEN'S WASHROOM 'C', WOMEN'S WASHROOM 'D' & H/C WASHROOM 'E' - ELEVATIONS AND DETAILS -

Design By: RG
Drawn By: AK/RZ
Checked By: RG
Project No:
Sheet No:

A614 A201

ROOM NUMBER	ROOM NAME	EXISTING FLOOR		NEW FLOOR		EXISTING WALLS								NEW WALLS		EXISTING CEILING			NEW CEILING			DOOR NO.	EXISTING ENTRANCE				NEW ENTRANCE				REMARKS	
		MATERIAL	FINISH	BASE	FINISH	BASE	NORTH		EAST		SOUTH		WEST		MATERIAL	FINISH	MATERIAL	FINISH	HEIGHT	MATERIAL	FINISH		HEIGHT	DOOR		FRAME		DOOR		FRAME		
							MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH										MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL		FINISH
'C'	MENS WASHROOM	CONCRETE	CERAMIC	CERAMIC	CERAMIC	---	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CERAMIC TILE / GYPSUM	PRE-FINISHED / PAINT	GYPSUM BOARD	PAINT	8'-0"	ACOUSTIC CEILING TILE	PRE-FINISHED	8'-0"	C	SOLID WOOD	PLASTIC LAMINATE	HOLLOW METAL	PAINT	SOLID WOOD	---	---	---	REFER TO NOTE #1, 3, 4, 7
'D'	WOMENS WASHROOM	CONCRETE	CERAMIC	CERAMIC	CERAMIC	---	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CERAMIC TILE / GYPSUM	PRE-FINISHED / PAINT	GYPSUM BOARD	PAINT	8'-0"	ACOUSTIC CEILING TILE	PRE-FINISHED	8'-0"	---	SOLID WOOD	PLASTIC LAMINATE	HOLLOW METAL	PAINT	---	---	---	---	
'D1'	WASHROOM VESTIBULE	CONCRETE	CERAMIC	CERAMIC	CERAMIC	---	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CERAMIC TILE	PRE-FINISHED	GYPSUM BOARD	PAINT	8'-0"	ACOUSTIC CEILING TILE	PRE-FINISHED	8'-0"	D	SOLID WOOD	PLASTIC LAMINATE	HOLLOW METAL	PAINT	HOLLOW METAL	---	---	---	REFER TO NOTE #1, 2, 3, 6
'E'	WOMENS H/C WASHROOM	CONCRETE	VCT	RUBBER	CERAMIC	---	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CONCRETE BLOCK	PAINT	CERAMIC TILE / GYPSUM	PRE-FINISHED / PAINT	GYPSUM BOARD	PAINT	8'-0"	ACOUSTIC CEILING TILE	PRE-FINISHED	8'-0"	E	SOLID WOOD	PLASTIC LAMINATE	HOLLOW METAL	PAINT	HOLLOW METAL	PAINT	HOLLOW METAL	PAINT	REFER TO NOTE #1, 2, 3, 5

- NOTES:
- CERAMIC TILE TO CARRY UP 4'-0" ABOVE FINISH FLOOR LEVEL (REFER TO DETAIL 202P ON SHEET A202)
 - REFER TO NEW DOOR ELEVATION DETAIL 202O ON SHEET A202 FOR SIZE AND LOUVER LOCATION.
 - FLOORING TRANSITION STRIPS REQUIRED AT DOOR (REFER TO DETAIL ON SHEET A201)
 - EXISTING DOOR AND FRAME TO BE PAINTED. BARRIER FREE DOOR OPERATOR, NEW KICK PLATES REQUIRED ON ALL EXISTING DOOR.
 - HARDWARE INCLUDES: BARRIER FREE DOOR OPERATOR, DOOR STOP, PUSH/PULL HARDWARE, HINGES, DOOR LOUVER, LOCKSET WITH DEADBOLT AND KICK PLATES.
 - HARDWARE INCLUDES: DOOR STOP, LOCKSET WITH DEADBOLT, HINGES, DOOR LOUVER AND KICK PLATES.
 - SIGNAGE TO BE RE-INSTALLED AFTER PAINTING EXISTING DOORS.

This drawing, as an instrument of service, is provided by and is the property of Glos Associates Inc.

The contractor must verify and accept responsibility for all dimensions and conditions on site and must notify Glos Associates Inc. of any variation from the supplied information.

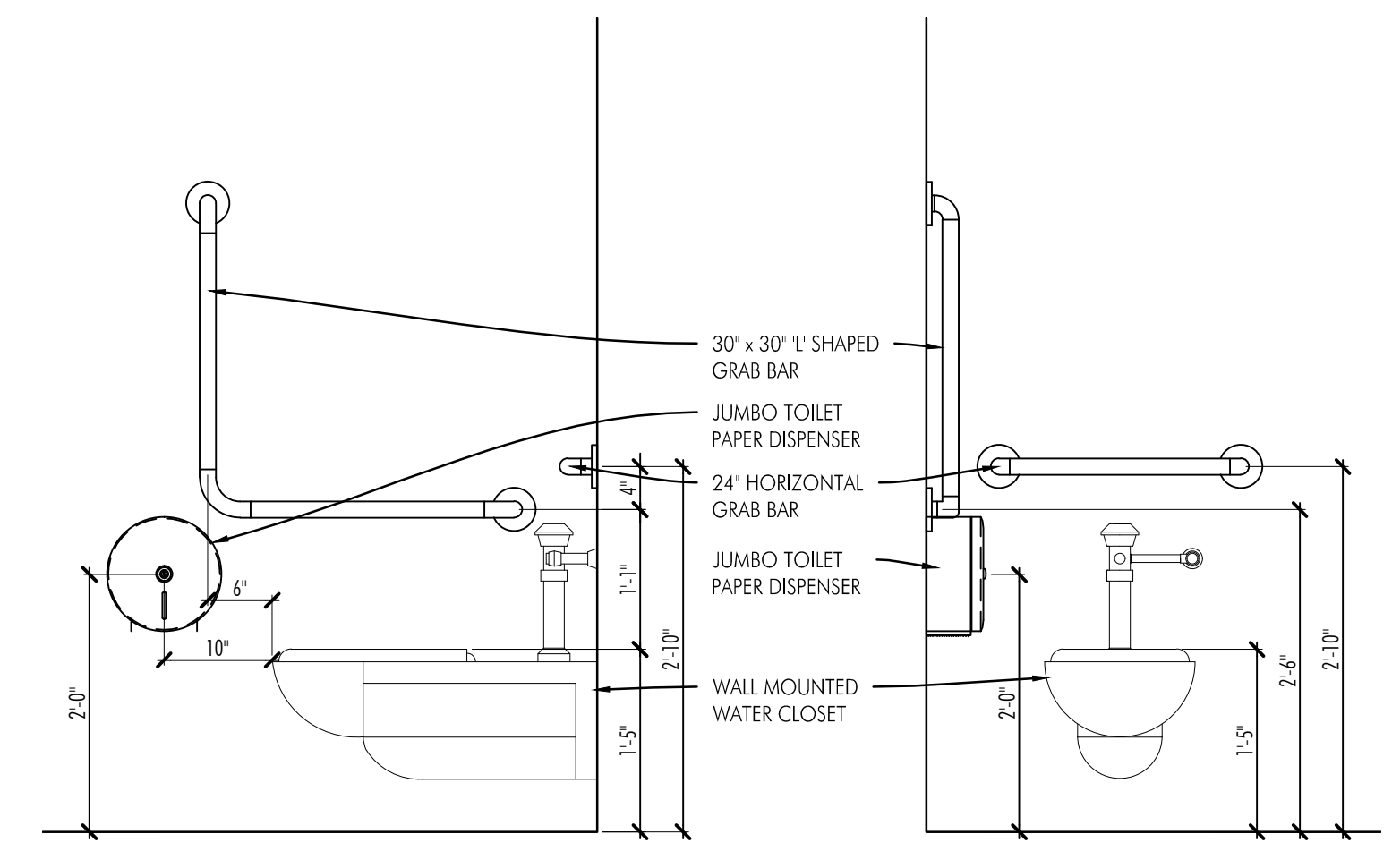
This drawing is NOT to be scaled.
This discipline is not responsible for the accuracy of survey, and the other disciplines information shown on this drawing. Refer to the appropriate consultant's drawings before proceeding with the work.

Construction must conform to all applicable codes and requirements of authorities having jurisdiction.

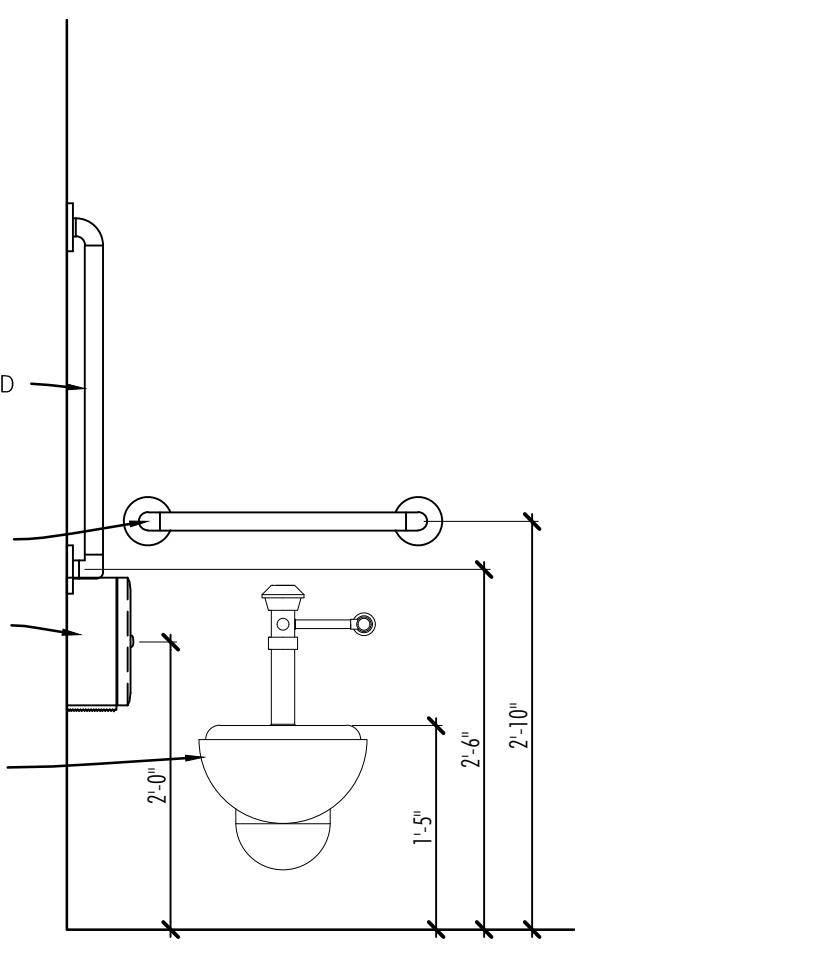
The contractor working from drawings not specifically marked 'For Construction' must assume full responsibility and bear costs for any corrections or damages resulting from his work.

VIEW NUMBER
REFERENCE SHEET
CALLOUT BUBBLE - GUIDE

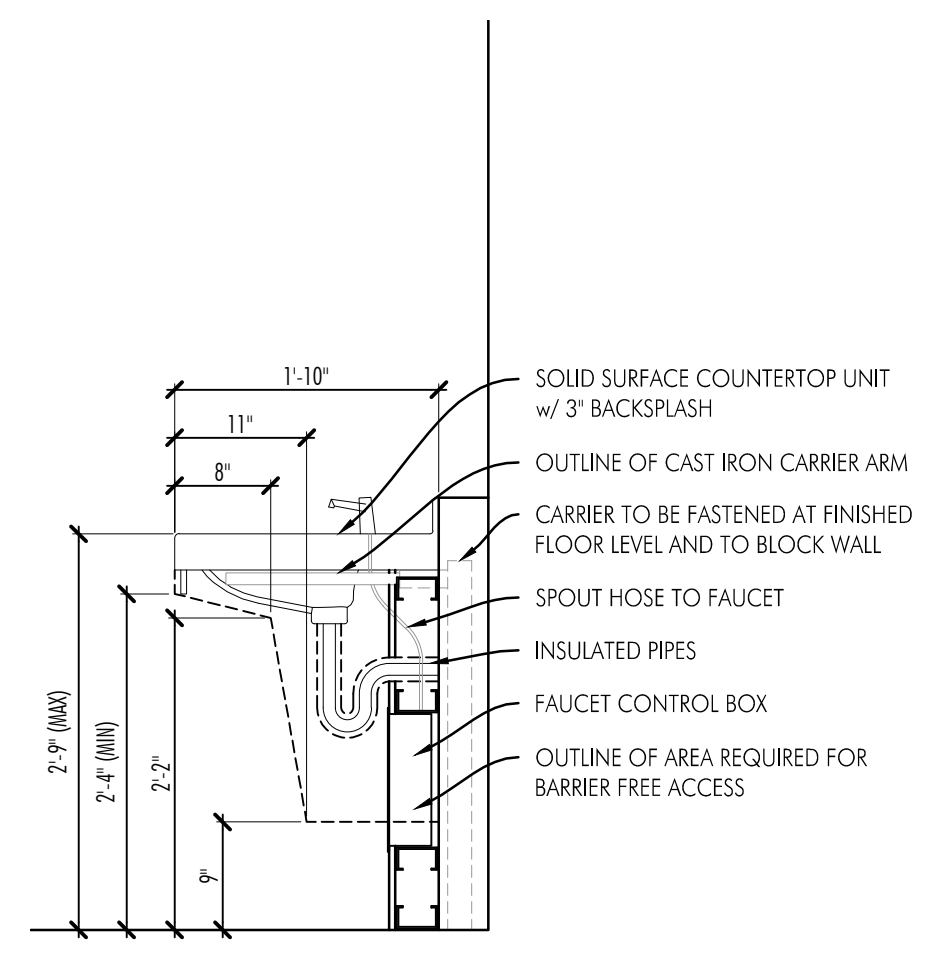
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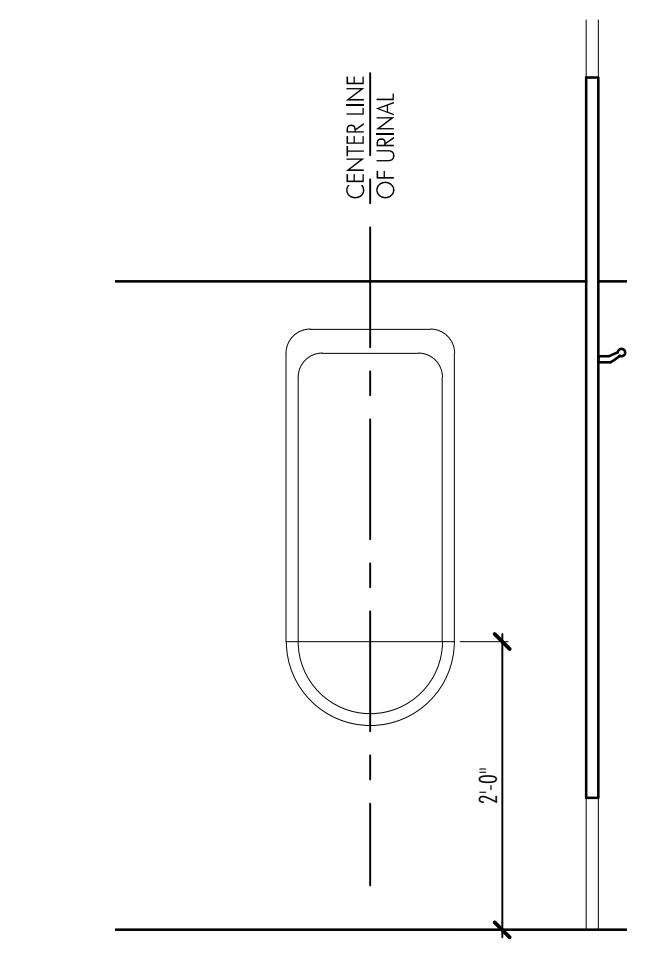
202A
A201
BARRIER FREE WATER CLOSET
SCALE: 3/4"=1'-0"



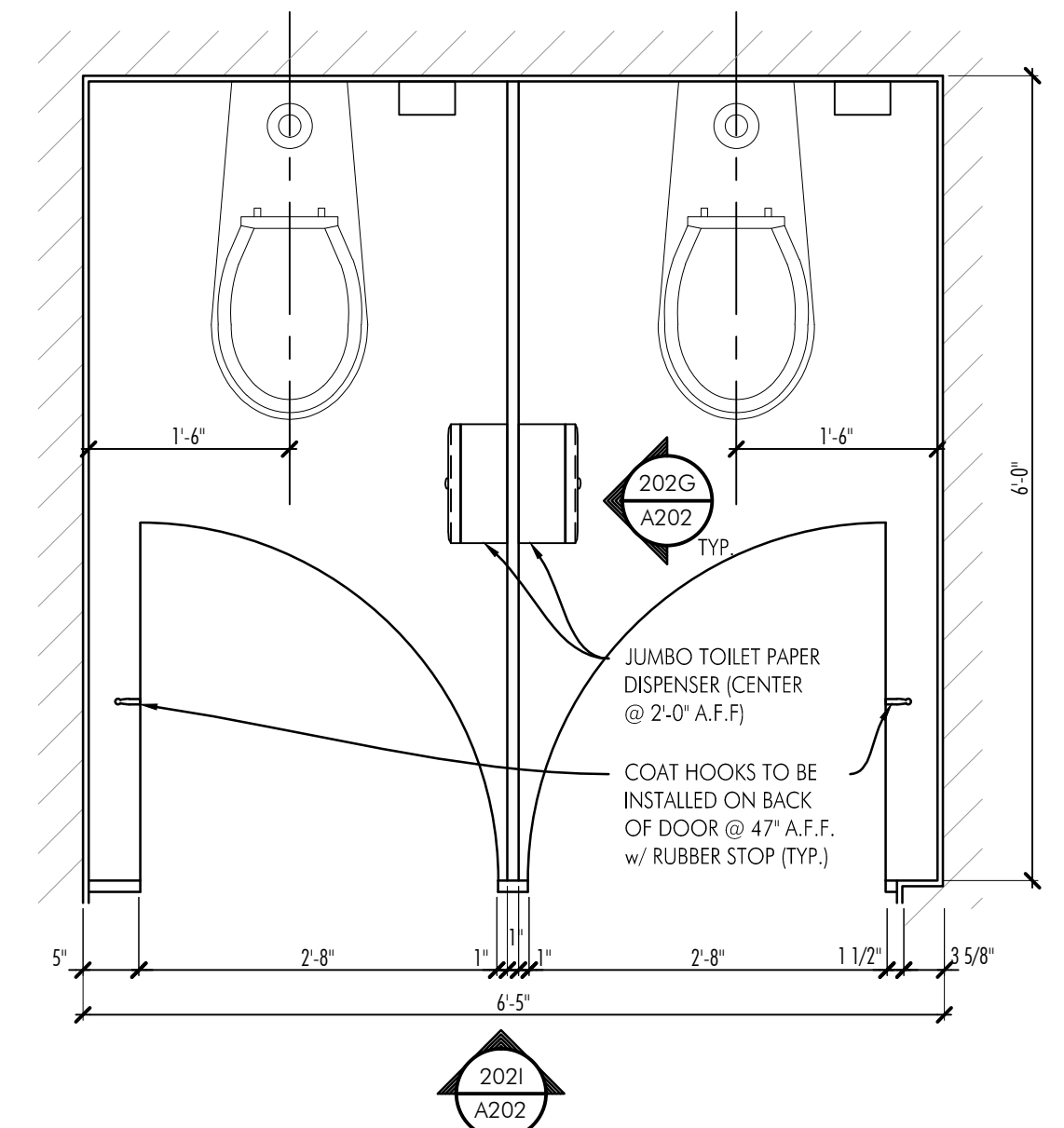
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A201
BARRIER FREE WATER CLOSET
SCALE: 3/4"=1'-0"



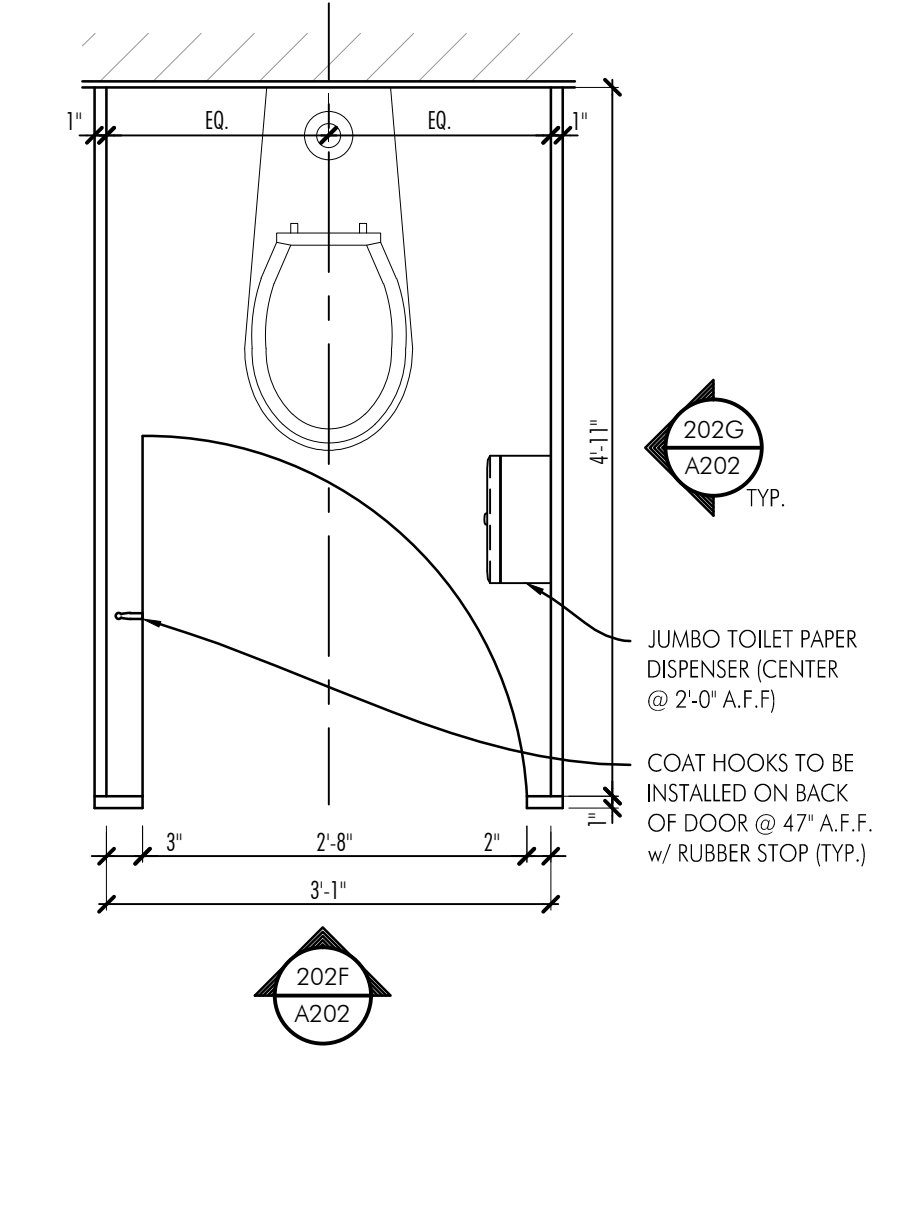
202C
A201
BARRIER FREE LAVATORY
SCALE: 3/4"=1'-0"



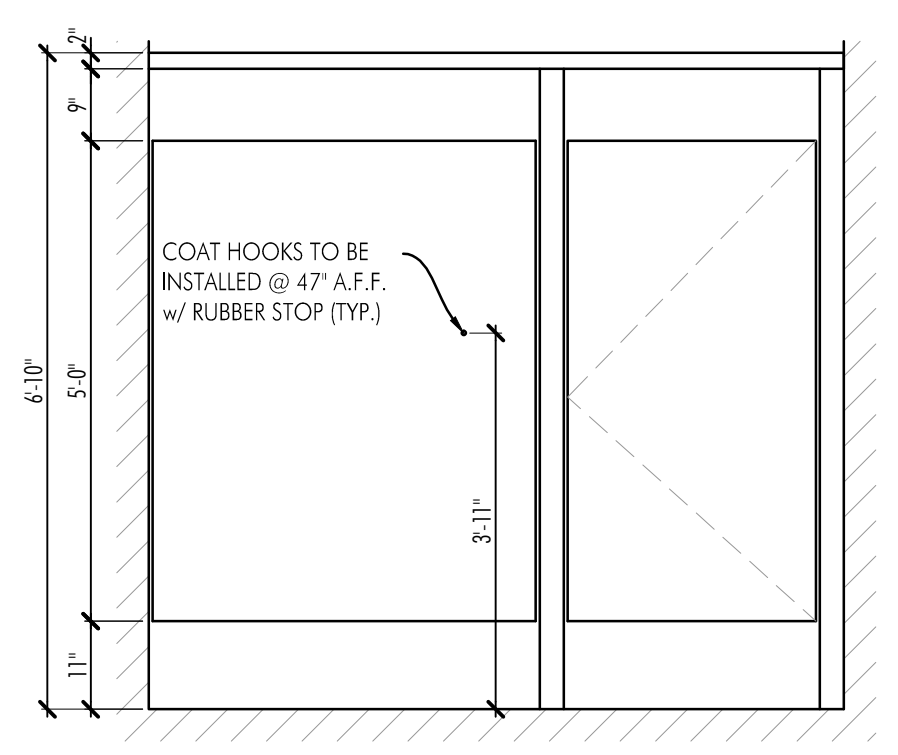
202D
A201
TYP. URINAL ELEVATION
SCALE: 3/4"=1'-0"



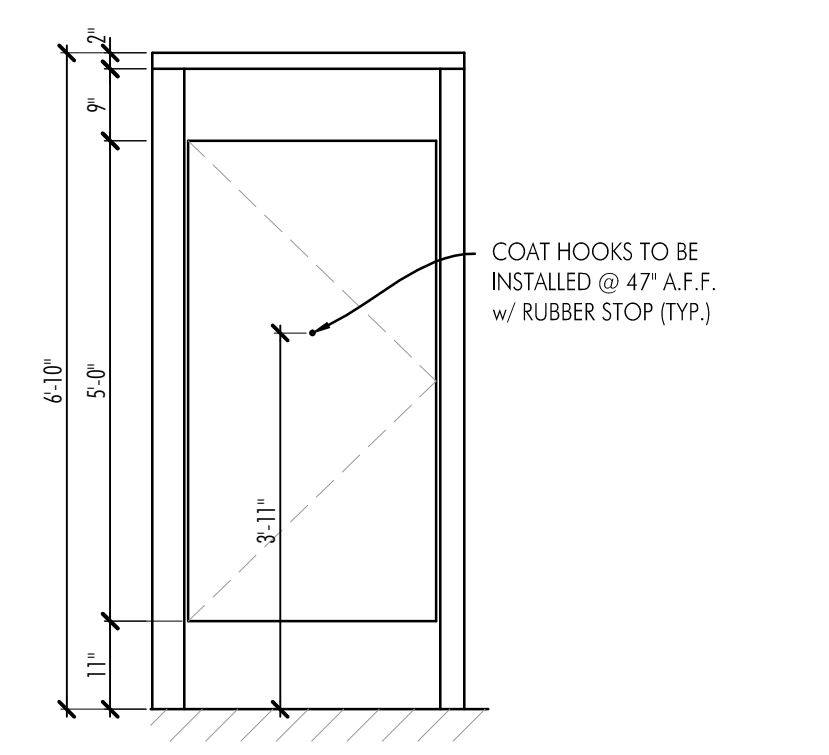
202E
A202
WATER CLOSET STALLS (WASHROOM 'D')
SCALE: 3/4"=1'-0"



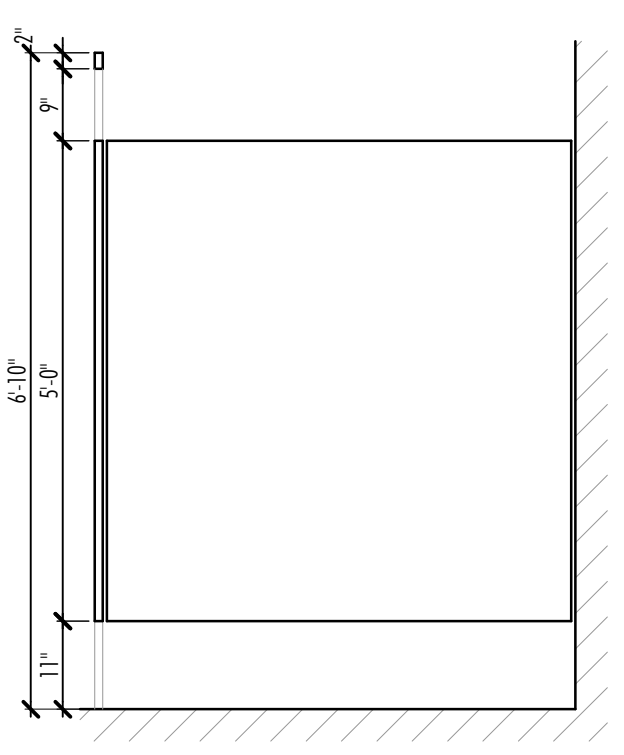
202F
A202
TYPICAL WATER CLOSET STALL
SCALE: 3/4"=1'-0"



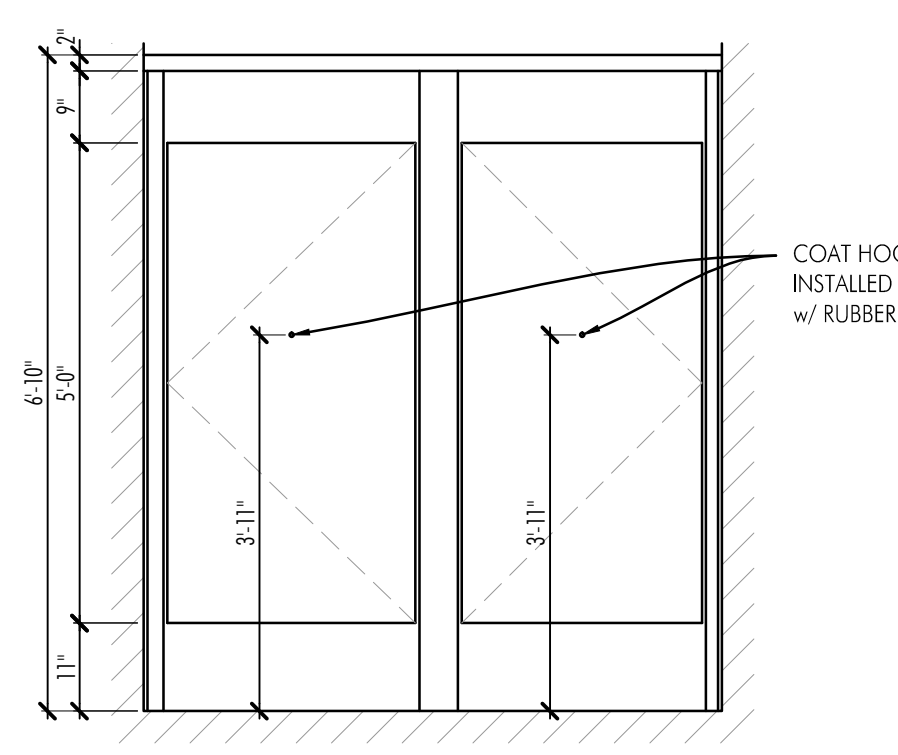
202G
A202
PARTITION ELEVATION
SCALE: 1/2"=1'-0"



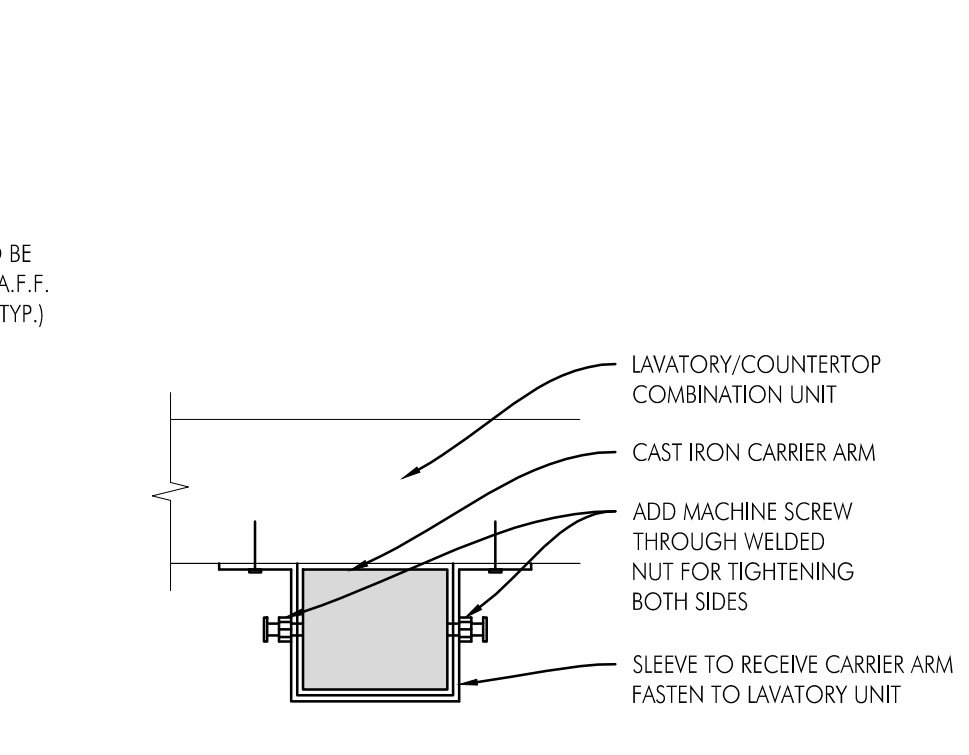
202H
A202
PARTITION ELEVATION
SCALE: 1/2"=1'-0"



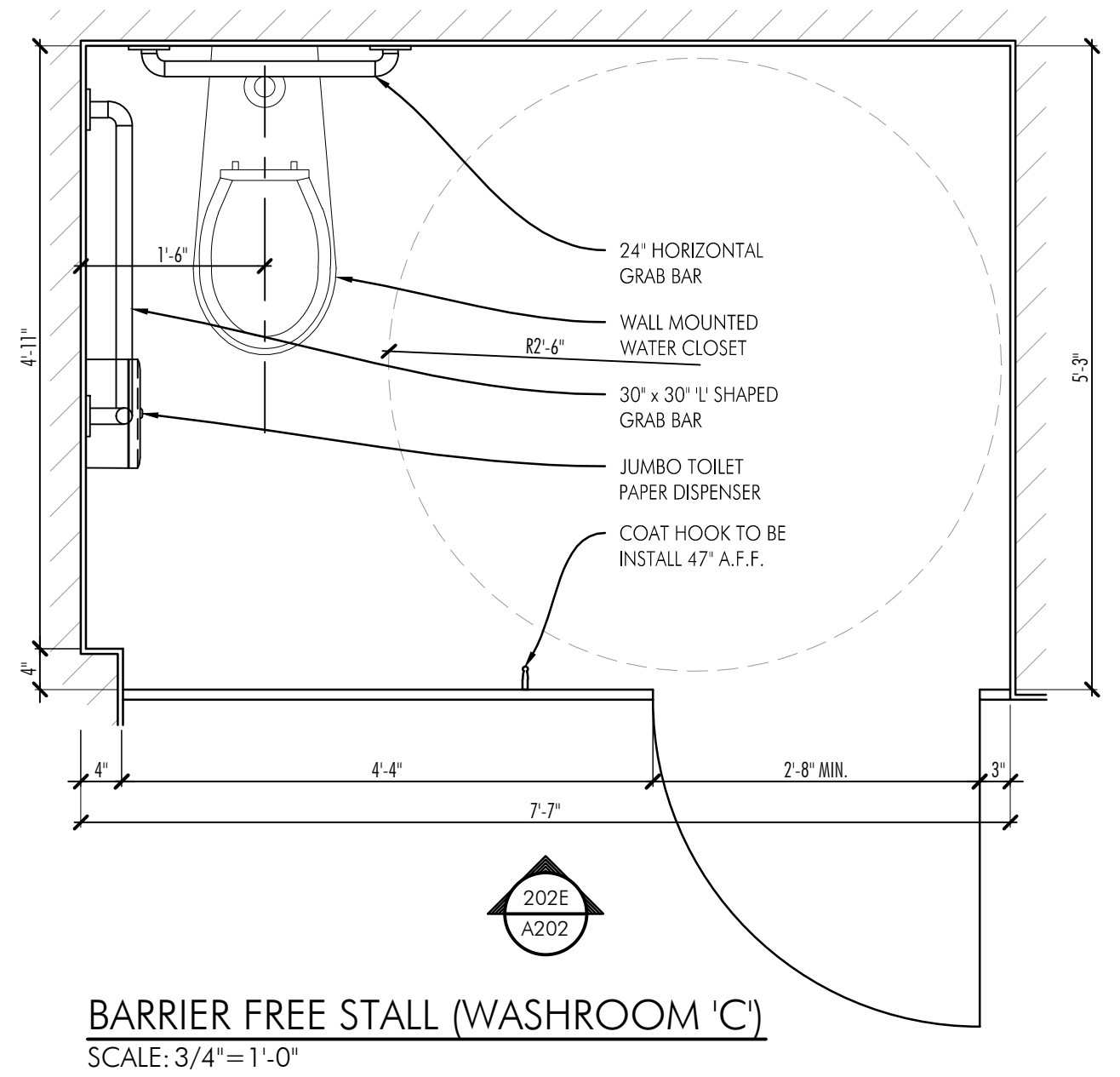
202I
A202
PARTITION ELEVATION
SCALE: 1/2"=1'-0"



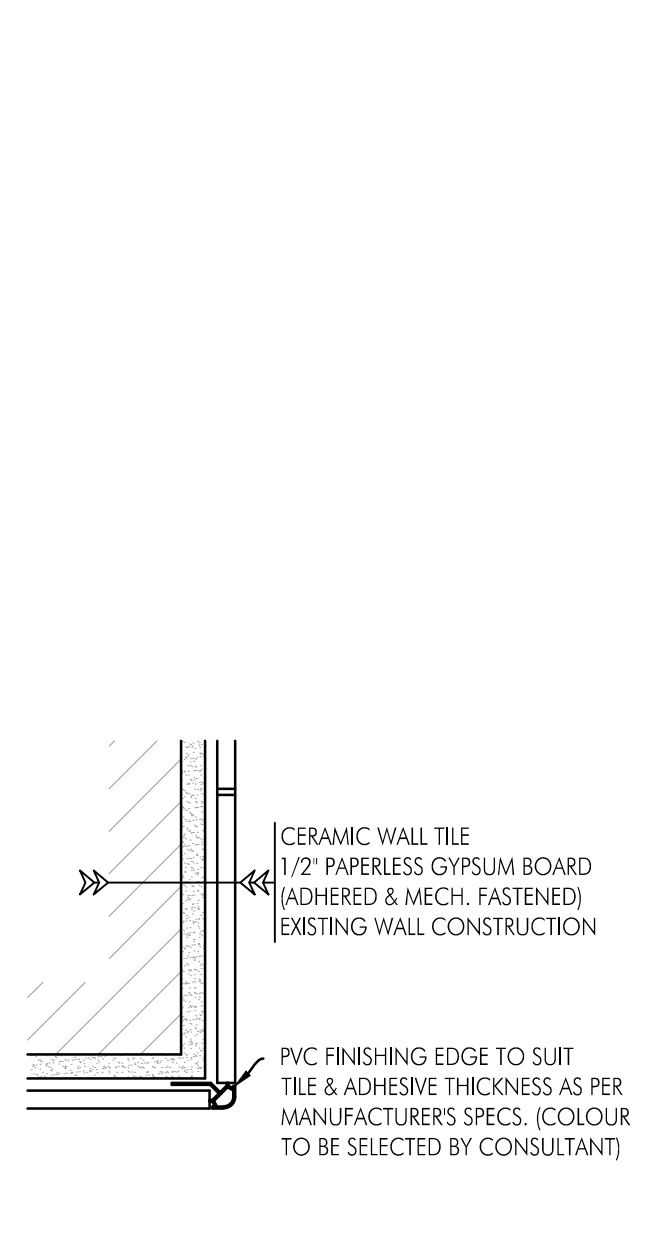
202J
A202
PARTITION ELEVATION
SCALE: 1/2"=1'-0"



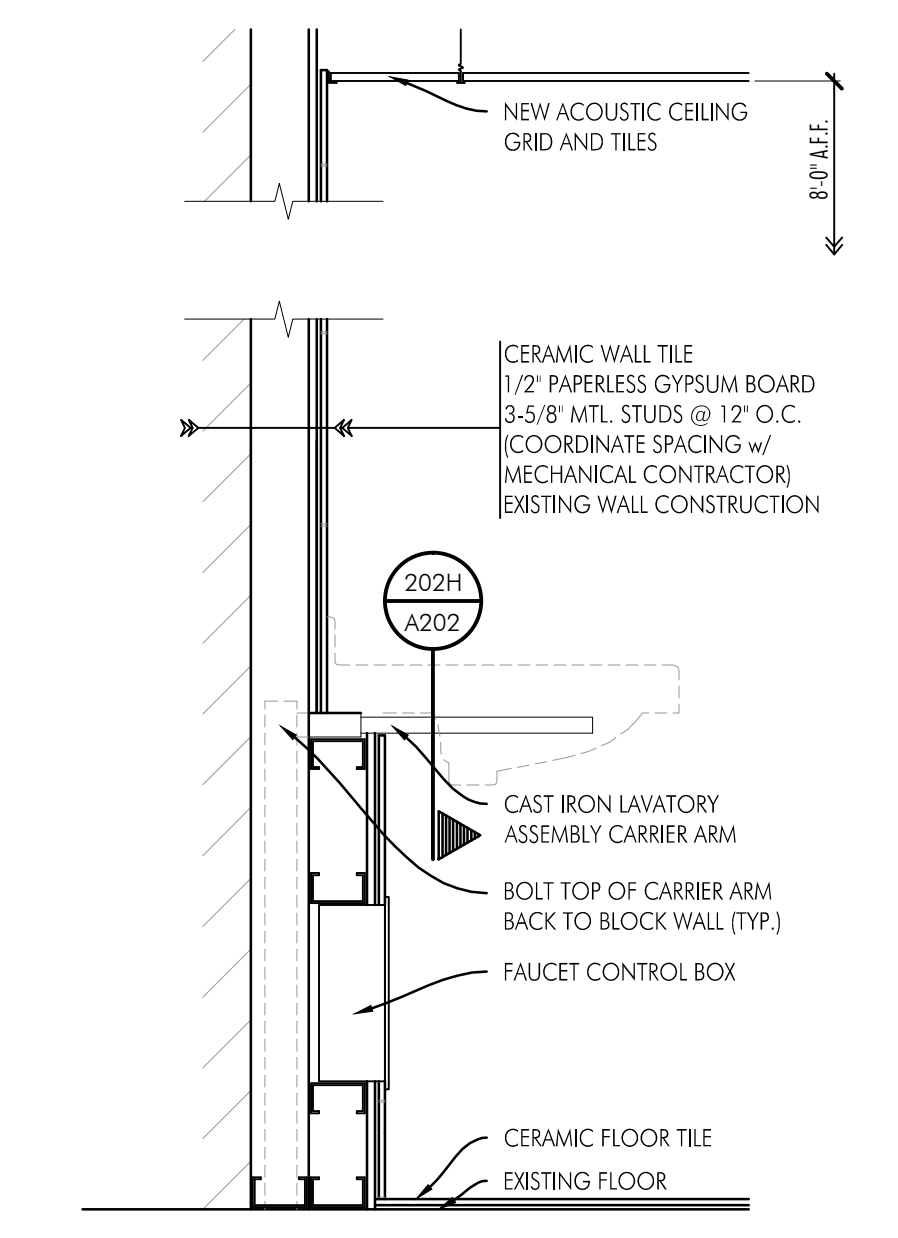
202K
A202
CARRIER ARM CONNECTION DETAIL
SCALE: 3"=1'-0"



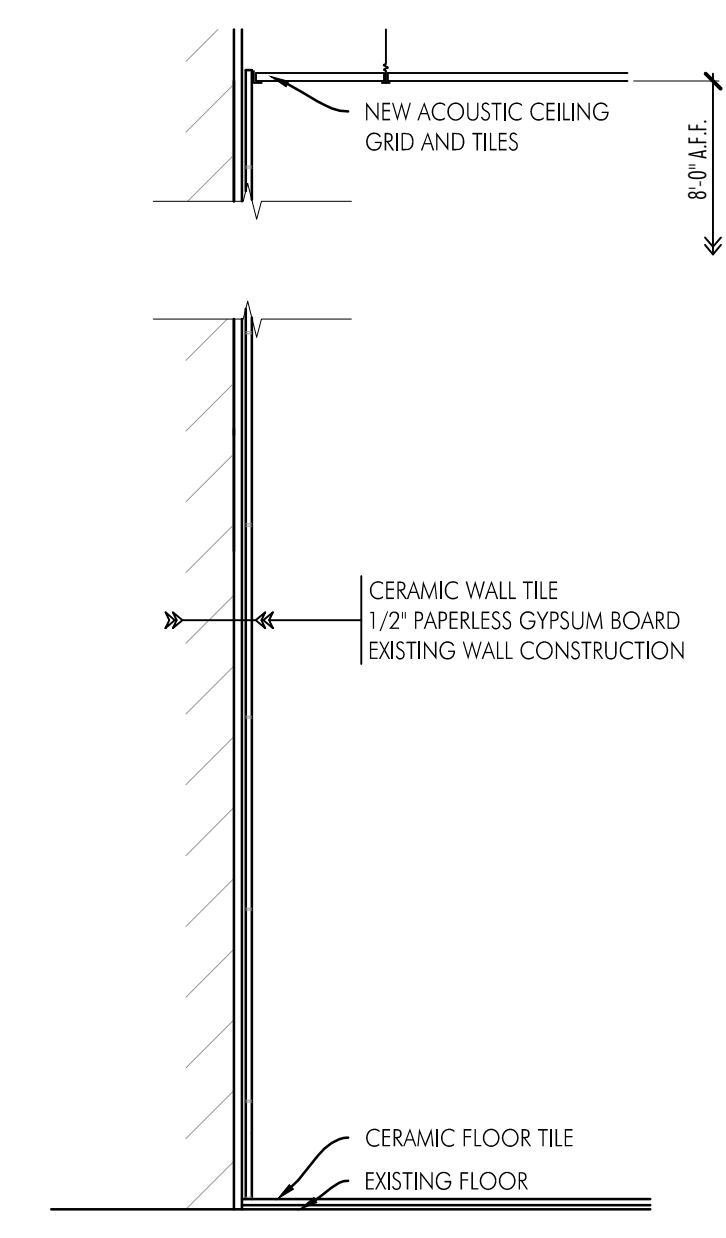
202L
A202
BARRIER FREE STALL (WASHROOM 'C')
SCALE: 3/4"=1'-0"



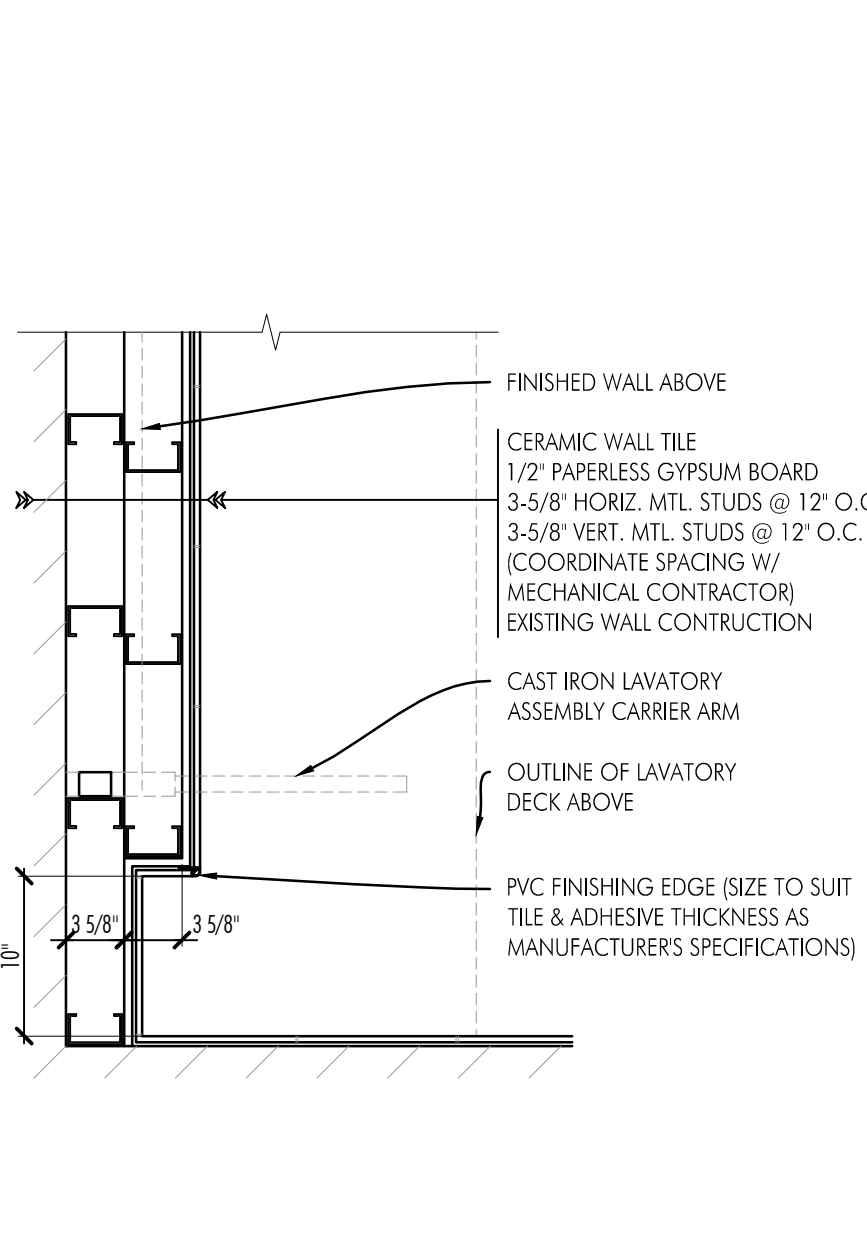
202M
A202
TYPICAL CORNER FINISH
SCALE: 3"=1'-0"



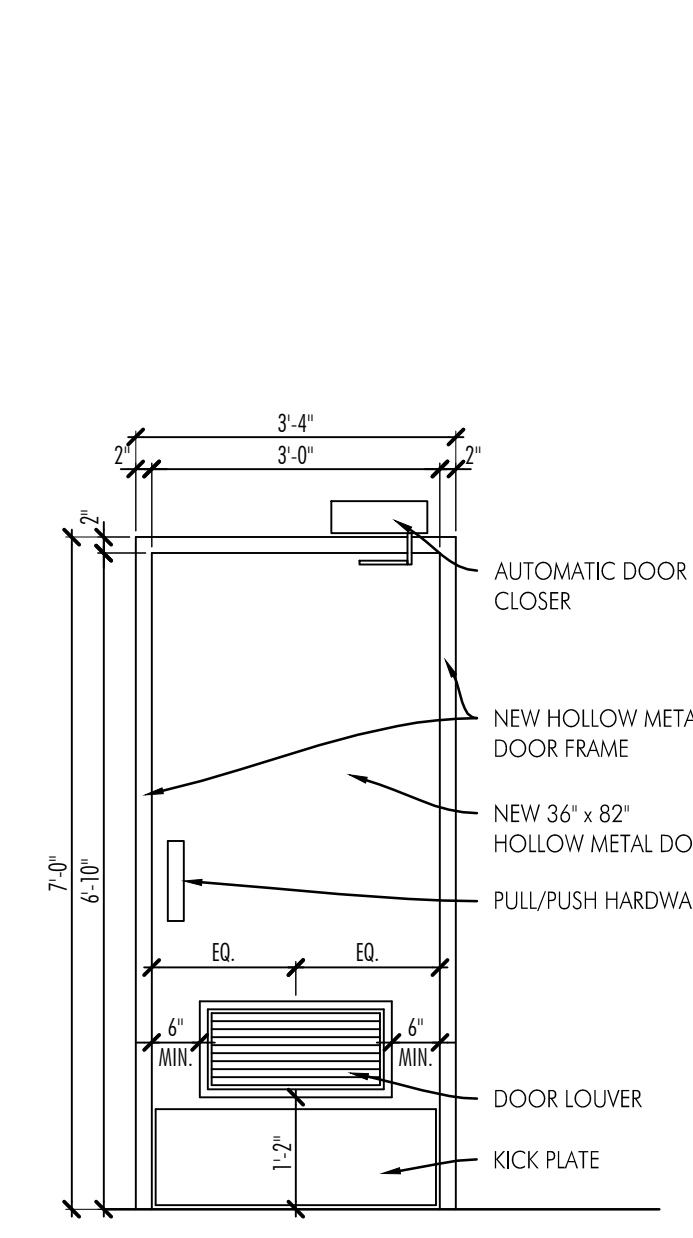
202N
A201
TYP. CHASE NO. 1
SCALE: 1/2"=1'-0"



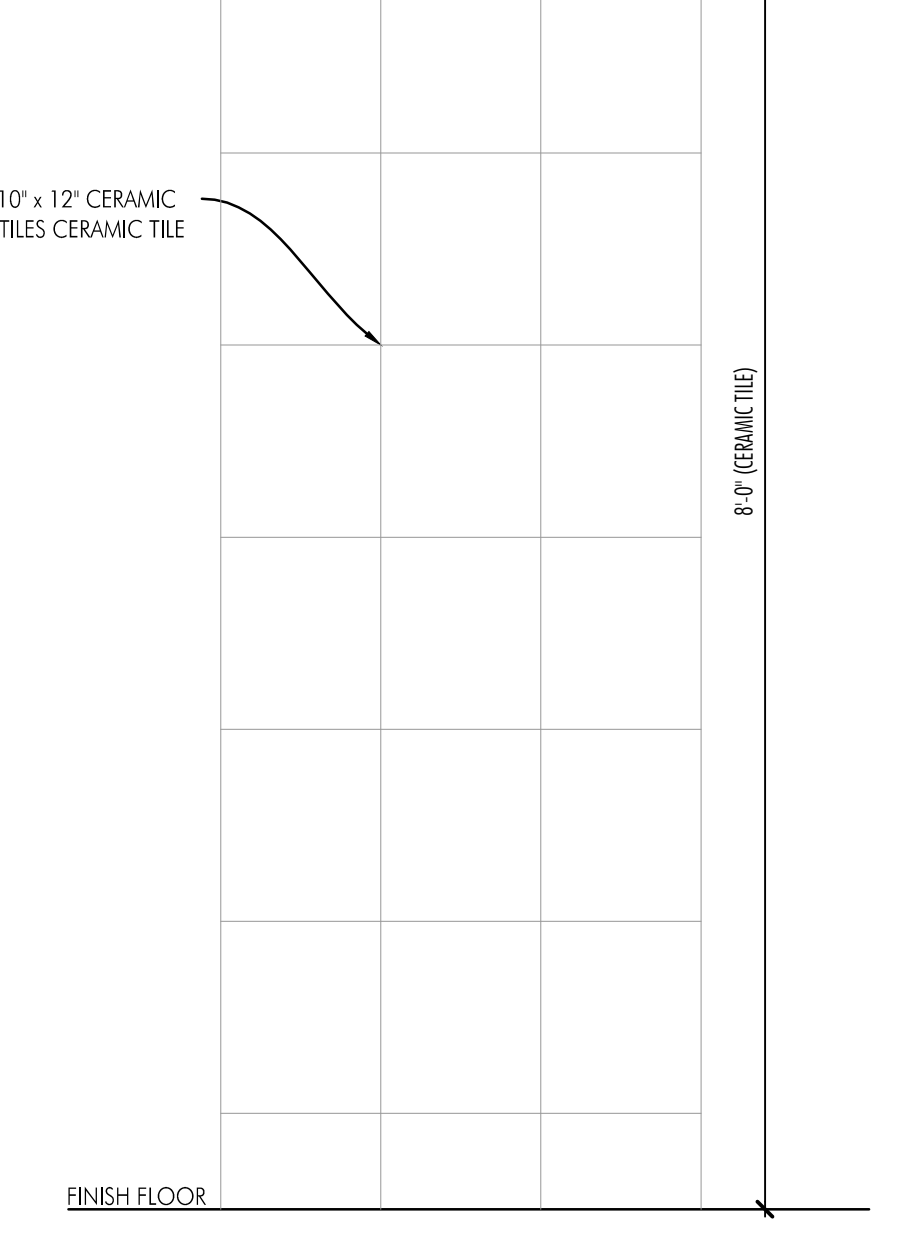
202O
A201
TYP. FINISH TO EXISTING WALLS
SCALE: 1/2"=1'-0"



202P
A201
TYP. FINISH TO EXISTING WALLS
SCALE: 1"=1'-0"



202Q
A202
TYP. DOOR ELEVATION
SCALE: 1/2"=1'-0"



202R
A202
TYP. TILE ELEVATION
SCALE: 1"=1'-0"

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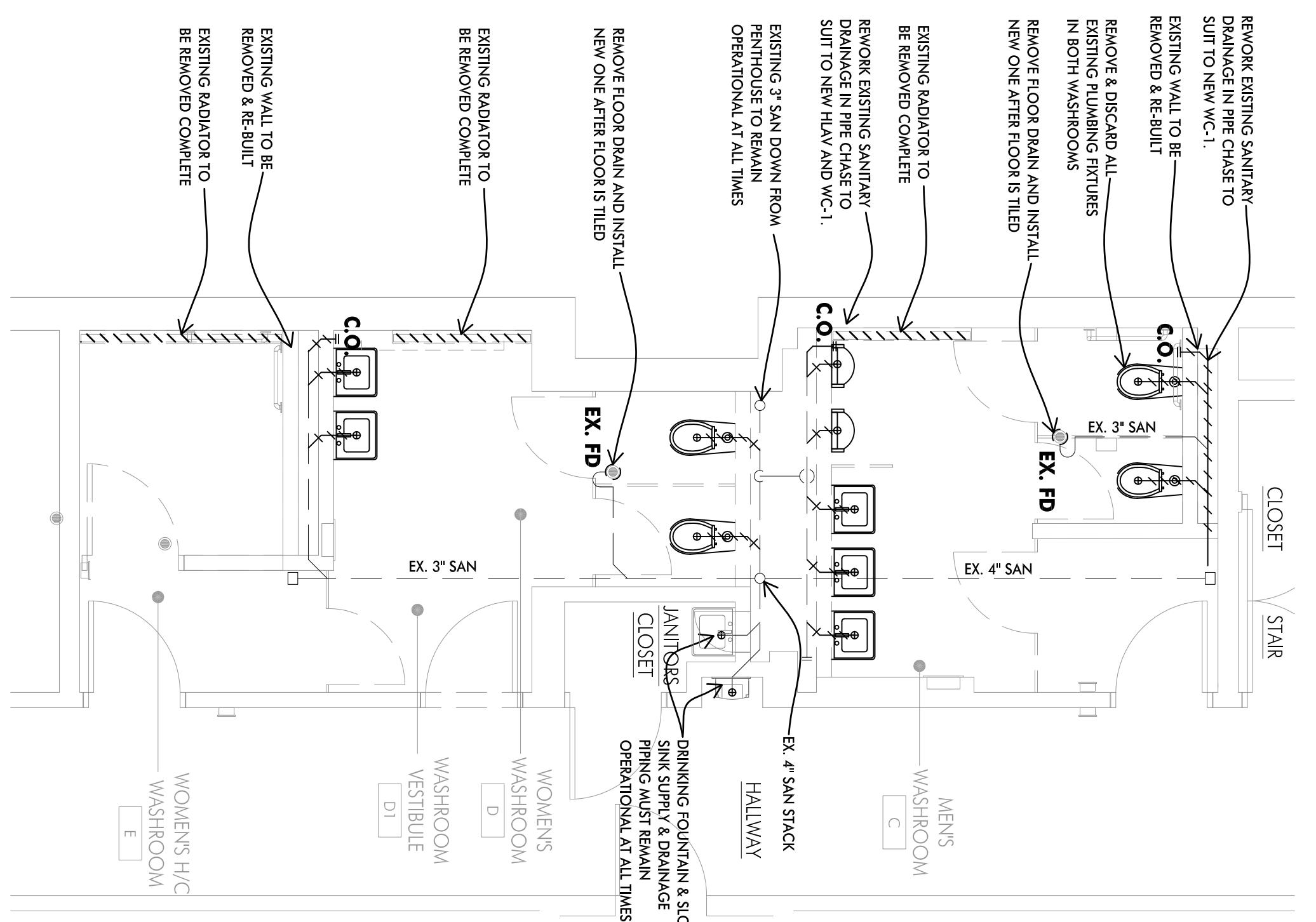
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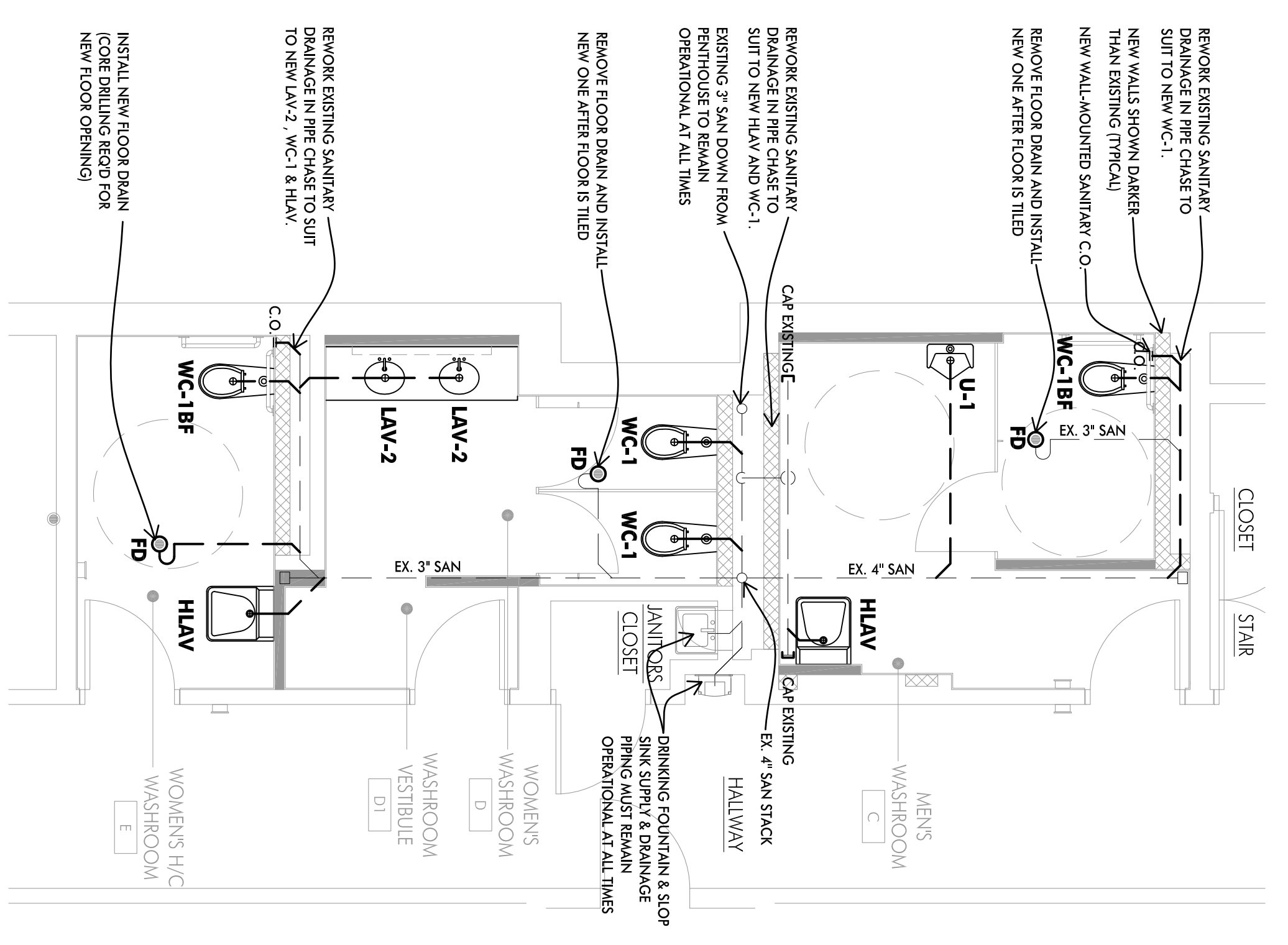
Sheet Title:
SECTIONS AND DETAILS
Design By: RG
Drawn By: AK/RZ
Checked By: RG
Project No:
Sheet No:

A614 A202

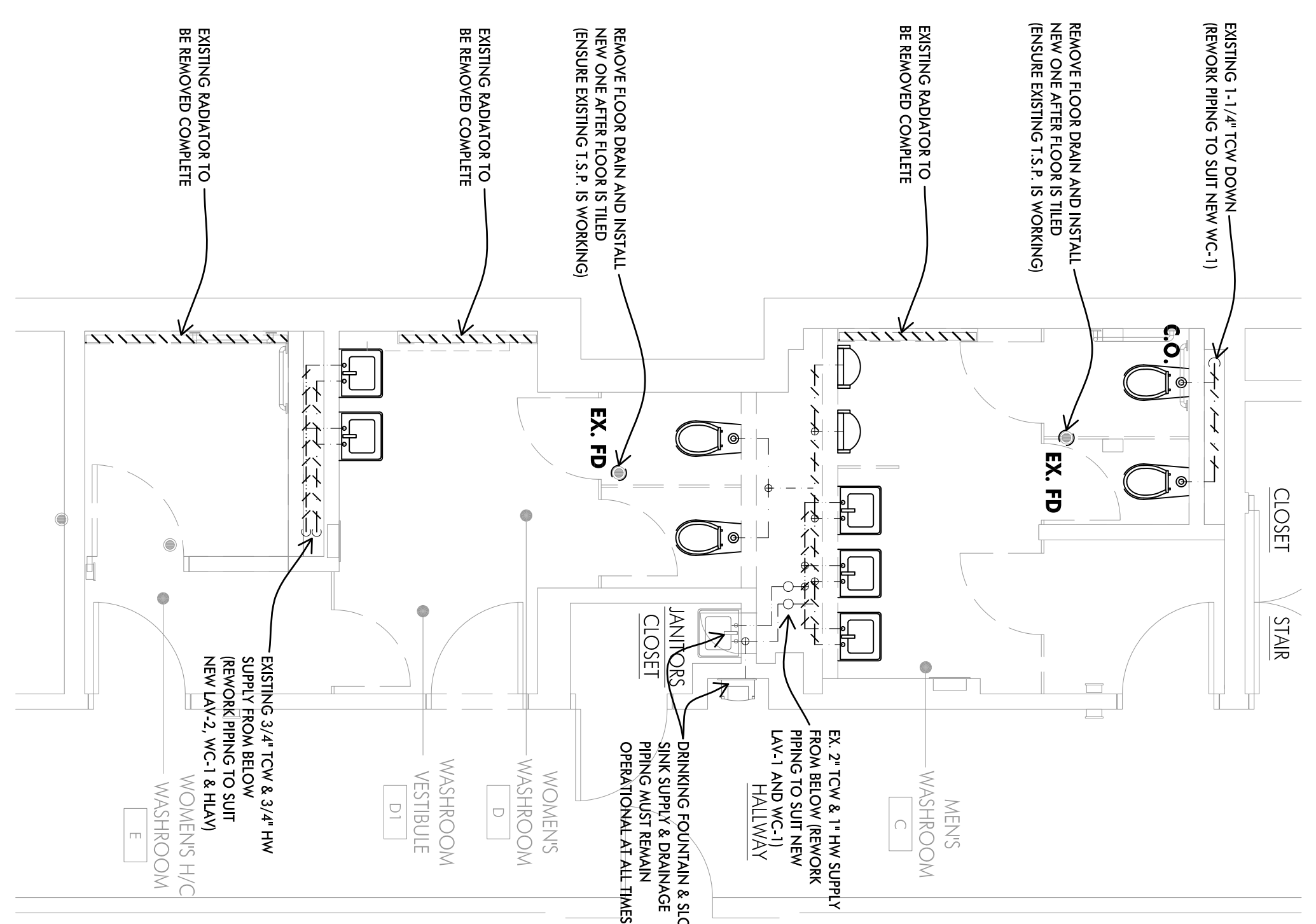
2015/10/16 8:42 AM



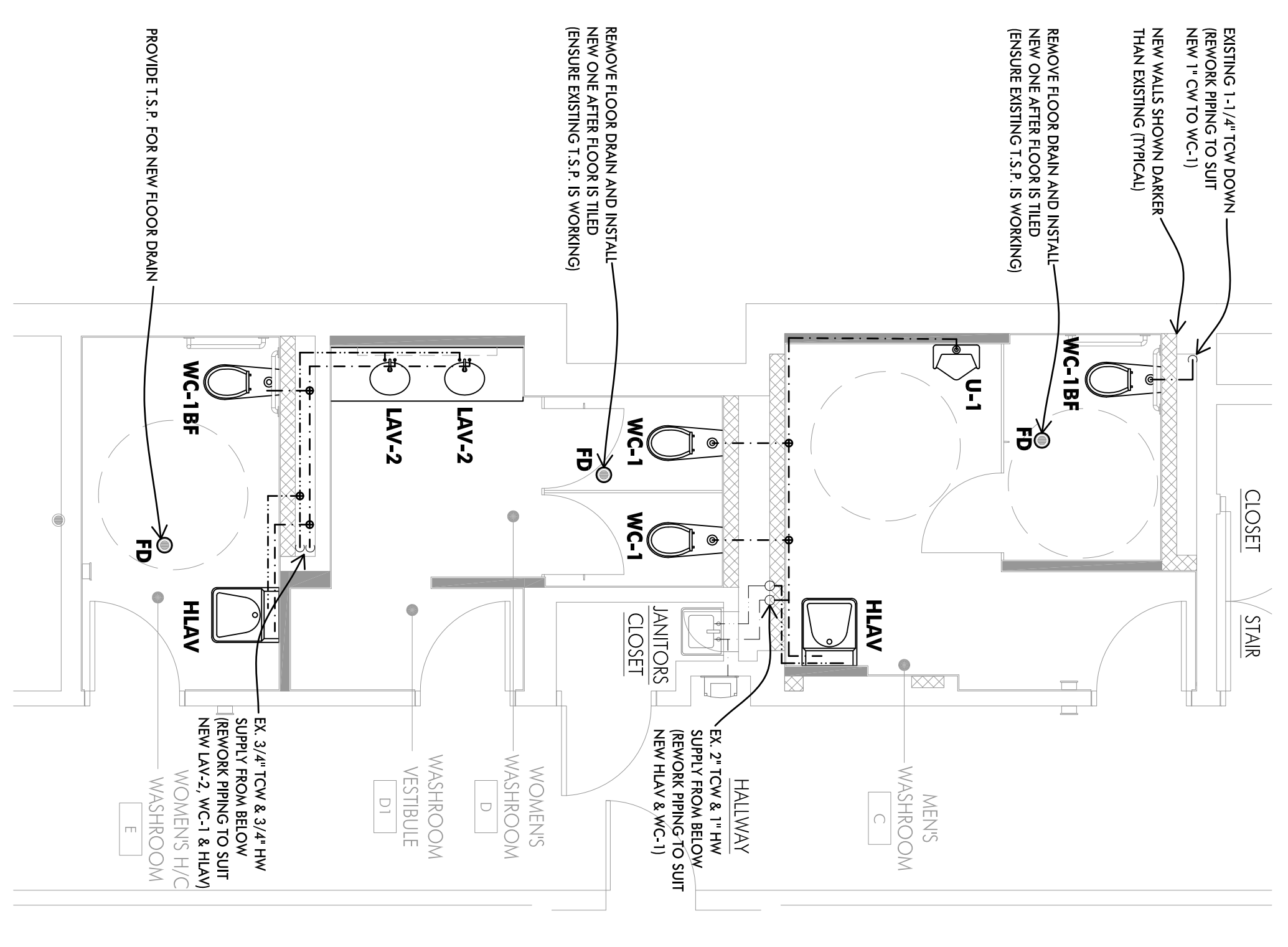
DEMOLITION PLAN - SANITARY PIPING
SCALE: 1/4"=1'-0"



NEW FLOOR PLAN - SANITARY PIPING
SCALE: 1/4"=1'-0"

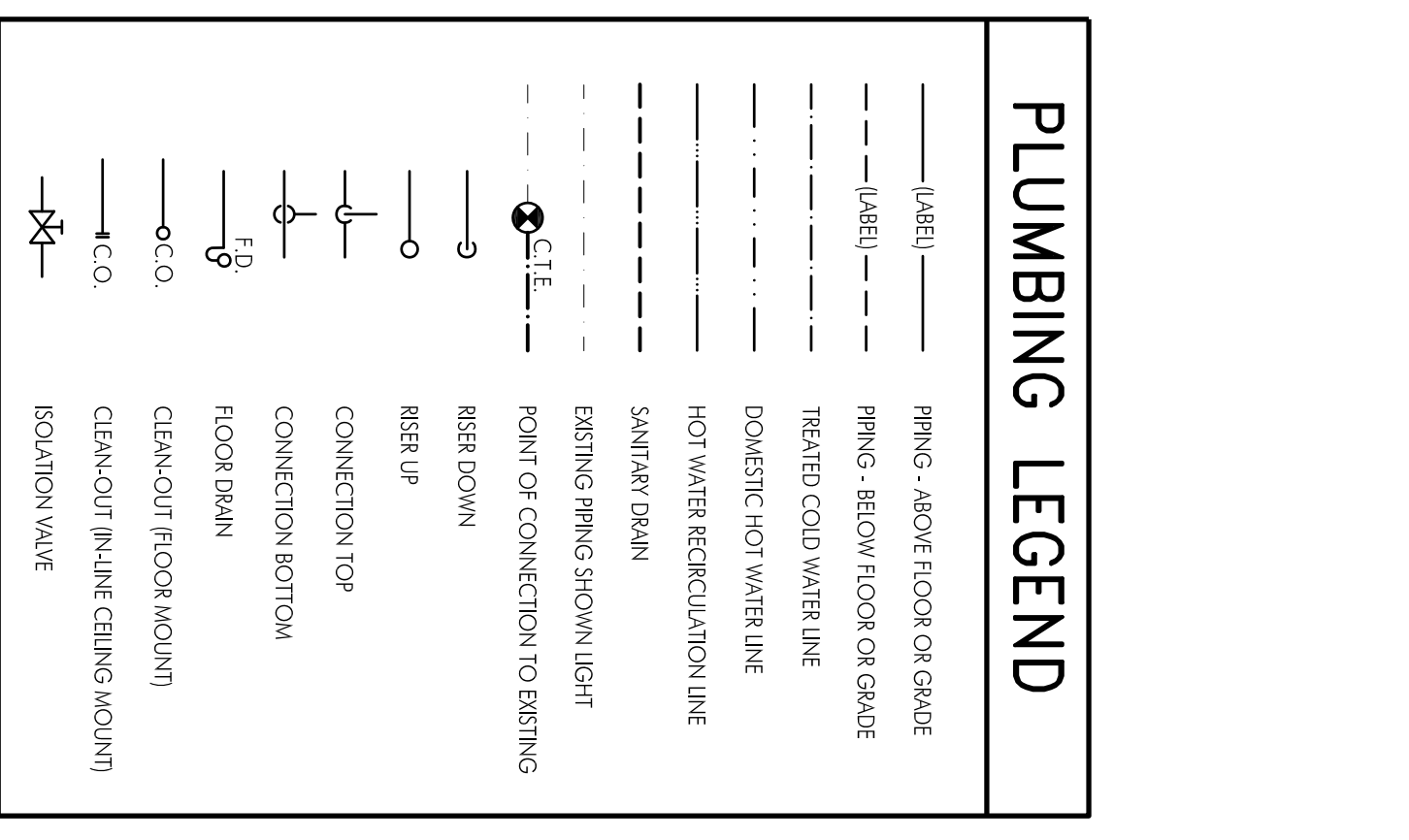


DEMOLITION PLAN - SUPPLY PIPING
SCALE: 1/4"=1'-0"



NEW FLOOR PLAN - SUPPLY PIPING
SCALE: 1/4"=1'-0"

MARK	FIXTURE	COLD WATER	HOT WATER	DRAIN	VENT	REMARKS
WC-1	WATER CLOSET	1"	1"	3"	1-1/2"	WALL-MOUNTED TOILET WITH ELECTRONIC FLUSH VALVE (PROCESSED TOP SHUT - HARD WIRED) INSTALL AT THE FOLLOWING HEIGHTS: . 15" FOR STANDARD WC-1 TOILET . 17" FOR ADA BARRED FREE WC-1/BF TOILET
U-1	URINAL	-	-	2"	1-1/2"	WALL-MOUNTED WATERLESS URINAL
LAV-2	VANITY BURN WITH 2 BOWLS	1/2"	1/2"	1-1/4"	1-1/4"	SOLO SURFACE COUNTER TOP DRAINAGE WITH ELECTRONIC FAUCETS. INSTALL SHEET P-TRAP FOR ALL BASINS. SEE PLUMBING NOTE 23 BELOW. BRUSHON 120° BURNISH LAMINUM CABINETS AS PER SHEET DETAIL SHOWN ON DWG 2402-26.HA.K.
H LAV	WALL-HUNG LAVATORY	1/2"	1/2"	1-1/4"	1-1/4"	HANDICAPPED WALL-HUNG WEROSIC CHINA LAVATORY WITH ELECTRONIC FAUCETS. PROVIDE INET CONTACT GUARD AND CARRIER.
FD	FLOOR DRAIN	EXISTING	-	EXISTING	EXISTING	REMOVE FLOOR DRAIN AND INSTALL NEW ONE AFTER FLOOR IS TIED (REMOVE EXISTING T.S.P. IS WORKING)
CO	CLEAN-OUT	-	-	EXISTING	-	CLEAN-OUT REPLACE ALL EXISTING CLEAN-OUTS WITH NEW
SD	SOAP DISPENSER	-	-	-	-	ELECTRONIC HAND SOAP SYSTEM EQUAL TO RETI-A-COREL 8530-550-1 (OPERATE USING HANDHELD) TO BE SUPPLIED (WASHER 5" WASHED 6" BY 10" MIN. SEE FINISHING PLAN SPEC FOR REVISIONS/DETAILS.



- PLUMBING NOTES:**
- THE PLUMBING WORK COVERED IN THIS CONTRACT INCLUDES ALL MATERIALS, EQUIPMENT AND LABOUR REQUIRED FOR COMPLETE PLUMBING SYSTEMS READY FOR OPERATION AS SHOWN, IN GENERAL, ON ARCH PLAN M101 & THE ASSOCIATED ARCH FLOOR PLANS AND AS BRIEFLY OUTLINED HEREINAFTER.
 - CONFORM WITH ONTARIO BUILDING CODE AND THE REQUIREMENTS OF THE LOCAL AUTHORITIES. MOST STRINGENT REQUIREMENTS SHALL GOVERN WHERE IN CONFLICT.
 - MAKE ARRANGEMENT FOR AND PAY ALL FEES FOR AUTHORIZED INSPECTIONS. MAKE ALL TESTS AND INSPECTIONS AS REQUIRED BY LOCAL AUTHORITIES, PROVINCIAL LAWS, ORDINANCES AND REGULATIONS IN THE PRESENCE OF THE AUTHORITIES AUTHORIZED INSPECTOR. DELIVER TO OWNER ALL CERTIFICATES OF INSPECTIONS.
 - RIFOR TO TENDER CLOSING, ALL CONTRACTORS SHALL VISIT THE JOB SITE TO VERIFY EXISTING CONDITIONS AND SATISFY THEMSELVES THAT THE WORK CAN BE SATISFACTORILY CARRIED OUT AS PER THE DRAWINGS. NO ERRORS OR OMISSIONS WILL BE ACCEPTED ON ACCOUNT OF FAILURE TO VISIT THE SITE TO DETERMINE CONDITIONS UNDER WHICH THE WORK WILL BE EXECUTED, SUCH AS ACCESS TO SITE UNLOADING, EXISTING CONDITIONS, SITE LIMITATIONS ETC. CONTRACTORS SHALL BOUND THE WORK AND DRAWINGS TO THE SITE CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS AND CONDITIONS OF THE WORK AND SHALL BE RESPONSIBLE FOR REVISING ARCHITECTURAL DRAWINGS TO INSURE ALL REQUIRED STRUCTURAL WORK NECESSARY FOR ANY MECHANICAL EQUIPMENT IS COVERED AND ACCOUNTED FOR IN THE TENDERED PRICE.
 - ALL CONTRACTORS WILL BE REQUIRED TO COOPERATE AND COORDINATE THEIR ACTIVITIES ON SITE WITH EXISTING OWNERS OPERATIONS AND ACTIVITIES. INTERRUPTION OF SERVICES WILL BE ALLOWED ONLY FOR THE FINAL TIE-IN OF THE NEW WORK. SHUTDOWN OF EXISTING PLUMBING SYSTEMS FOR NEW TIES SHALL BE COORDINATED WITH AND APPROVED BY OWNER. PROVIDE A MINIMUM OF (3) DAYS NOTICE PRIOR TO SCHEDULING ANY SHUTDOWN WORK.
 - NEW PIPING ON THE PLANS IS SHOWN DARKER THAN EXISTING. WHERE THE LOCATION OF EXISTING PLUMBING SERVICES HAS BEEN SHOWN ON THE PLANS, SUCH INFORMATION IS NOT GUARANTEED. BEFORE COMMENCING ANY WORK, THE CONTRACTOR SHALL ESTABLISH LOCATION OF EXISTING WATER SUPPLY & SANITARY DRAIN LINES FOR EACH WASHROOM BEING RENOVATED AND NOTIFY CONSULTANT OF HIS FINDINGS. IT IS THE RESPONSIBILITY OF THE SUCCESSFUL CONTRACTOR TO VERIFY EXISTING PIPING AND SERVICES. THE DEGREE OF DIFFERENCE BETWEEN WHAT IS SHOWN ON THE PLANS AND ON LOCATION SHALL BE THE CONTRACTOR'S RESPONSIBILITY. PROVIDE CONSULTANTS AND COMPANY FINISHES IN WRITING.
 - THE CONTRACTOR MUST PREPARE WORKING DRAWINGS OF THE PROPOSED METHOD OF INSTALLATION FOR THE NEW PLUMBING FIXTURES IN EACH RENOVATED WASHROOM. INSTALLATION OF NEW PLUMBING SHALL BE IN ACCORDANCE WITH OBC - USE NEW PIPING IN RETURN AIR INTAKE, REUSE EXISTING ROOF VENTS (NO) DO NOT TENSERATE ROOF FOR NEW PLUMBING VENTS. SUBMIT TO THE CONSULTANT FOR REVIEW.
 - REMOVE PRESENT PLUMBING WASTE SOIL, VENT LINES AND WATER PIPING AS MAY BE REQUIRED FOR THE REVISED PLUMBING INSTALLATION BY RELOCATING, REMOVING OR ADDING NEW PIPING AS MAY BE REQUIRED TO SUIT THE PLUMBING FIXTURES AS SHOWN IN THE NEW FLOOR PLANS, FLAG OR CAP ALL UNUSED OUTLETS IN THE FINISHES.
 - TEST, FLUSH AND STERILIZE DOMESTIC WATER PIPES IN ACCORDANCE WITH OBC PROCEDURES AND LOCAL CODES & REGULATIONS.
 - INSTALL NEW SANITARY VENTING IN ACCORDANCE WITH OBC - USE NEW PIPING IN RETURN AIR INTAKE, REUSE EXISTING ROOF VENTS (NO) DO NOT TENSERATE ROOF FOR NEW PLUMBING VENTS.
 - INSTALL CLEAN-OUTS IN THE SANITARY DRAINAGE SYSTEM AS SHOWN ON THE PLANS AND WHEREVER ELSE REQUIRED BY THE OBC.
 - LOCATE NEW PLUMBING FIXTURES IN STRICT CONFORMANCE WITH THE DETAIL DIMENSIONS SHOWN ON THE ARCHITECTURAL FLOOR PLANS.
 - REFER ALSO TO THE ARCHITECTURAL FLOOR PLANS FOR ADDITIONAL MECHANICAL NOTES AND PLUMBING WORK.
 - GENERAL CONTRACTOR & MECHANICAL TRADES SHALL COORDINATE REMOVAL OF GYPSUM WALL BOARD CEILINGS AS NEEDED TO INSTALL NEW PLUMBING SUPPLY AND VENT LINES. ALL EXISTING GIBB CEILINGS WILL BE REMOVED COMPLETE AND NEW T-BAR CEILINGS INSTALLED IN ALL OF THE RENOVATED WASHROOMS.
 - ASBESTOS PIPING INSULATION (IF ANY) WILL BE REMOVED BY OTHERS. HOWEVER, THE CONTRACTOR SHALL INCLUDE FOR THE COMBINATION OF SAME. THIS CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR RENOVATING EXISTING PIPING AS RESULT OF THE ASBESTOS ABATEMENT.
 - MECHANICAL CONTRACTOR SHALL VERIFY ACCESS DOORS OF ADEQUATE SIZE TO SERVICE ANY EQUIPMENT WHICH REQUIRES MAIN TENANCE OR REMOVAL. ALSO, PROVIDE ACCESS PANELS AS REQUIRED BY THE GENERAL CONTRACTOR. SIZES AND LOCATION OF NEW ACCESS PANELS SHOWN ON THE PLANS ARE FOR GUIDING PURPOSES ONLY. CONTRACTOR SHALL FIELD VERIFY SIZES AND QUALITIES REQUIRED. ACCESS DOORS SHALL BE EQUAL TO ALCORUM MODEL UF-5000. PROVIDE SPANNER HEAD CAM LATCH FOR ALL WALL-MOUNTED ACCESS DOORS.
 - THE PLUMBING TRADE SHALL BE RESPONSIBLE FOR SEALING AND CALIBRATING AROUND ALL URINALS AND ALL LAVATORIES.
 - PLUMBING CONTRACTOR SHALL COORDINATE LOCATION OF TOILETS WITH GENERAL CONTRACTOR TO INSURE TOILETS GENERATED IN THE NEW TOILET PARTITION FOR STANDARD TOILETS OR AS OTHERWISE INDICATED ON THE PLANS. LOCATE ACCESSIBLE TOILETS TO DEFINE DIMENSIONS SHOWN ON THE PLANS.
 - MECHANICAL CONTRACTOR SHALL VERIFY OPERATION OF EXISTING TARP SEAL PRIMERS FOR EACH FLOOR DRAIN IN THE WASHROOMS TO BE RENOVATED. REPORT FINDINGS TO THE CONSULTANT FOR HIS REVIEW.
 - INSTALL ISOLATION VALVES WHERE NECESSARY TO ENSURE PROPER OPERATION AND SHUT-OFF OF ALL FIXTURES AND EQUIPMENT.
 - MECHANICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL REQUIRED 24V TRANSFORMERS FOR THE ELECTRONIC FIXTURES IN AN ACCESSIBLE LOCATION IN THE WASHROOM CEILING SPACE. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY PRIMARY VOLTAGE REQUIREMENT FOR THE TRANSFORMERS (EITHER 347V OR 240V). MECHANICAL CONTRACTOR SHALL INSTALL ALL 24V CO. TWO TERMINAL ELECTRICAL CONNECTIONS TO BE MADE TO THE TRANSFORMERS.
 - INSTALLATION OF ALL PLUMBING FIXTURES SHALL COMPLY WITH MANUFACTURERS INSTRUCTIONS. INCLUDE DETAILED START-UP ANALYSIS FOR EACH ELECTRICAL FIXTURE. RECORD THESE RESULTS FOR EACH FLOOR DRAIN IN THE WASHROOMS TO BE RENOVATED. ENSURE BOTH THE MANUAL DISH-WASH ACTION AND THE AUTOMATIC SENSORS ARE ALL WORKING PROPERLY.
 - PROVIDE SHOP DRAWINGS IN ELECTRONIC FORMAT FOR ALL PLUMBING FIXTURES & EQUIPMENT.
 - COUNTERTOP FOR LAV-2 SINK SHALL BE DUPONT CORIAN 100 SERIES DOUBLE VANTY w/ INTEGRAL ZEROWE SINKS. THE COUNTERTOP SHALL BE SIZED AND AS DETAILD ON THE ARCH DRAWINGS (COLOR CODE 4). SOLID-SURFACE (CORIAN) BOWL WITH 4" CENTERSET HOLES AND FRONT OVEFLOW.
 - CORIAN CONCEALED AMI CARRIER SLEEVES (SHIPPED LOOSE).
 - PROVIDE ALL NECESSARY BACK-SLASHES & SIDE-APRONS (IN COMB) TO SUIT THE CONSTRUCTION DETAILS AS DETICED ON THE ARCHITECTURAL DRAWINGS.
 - PROVIDE 120V/60HZ/15A/1P/1PH GROUND STRAINER.
 - PROVIDE 120V/60HZ/15A/1P/1PH GROUND STRAINER.
 - PROVIDE 120V/60HZ/15A/1P/1PH GROUND STRAINER.
 - PROVIDE THERMOSTATIC MIXING VALVE FOR EACH BOWL.
 - PROVIDE EXTRA LONG HEAVY-DUTY WALL CARRIER EQUAL TO ZURN MODEL 21231 w/ PARATEC ROUGH-IN.
 - INSTALLATION OF COUNTERTOP TO BE COORDINATED WITH GENERAL TRADES.

- EXHAUST GRILLES & HVAC NOTES:**
- CONFORM TO REQUIREMENTS OF OBC PART 6 AND ALL LOCAL PERINING REQUIREMENTS. ALLOWED WORK TO BE DONE SHALL BE IN ACCORDANCE WITH OBC & ASHRAE STANDARDS. MOST STRINGENT REQUIREMENTS SHALL GOVERN WHERE IN CONFLICT.
 - FOR EACH RENOVATED WASHROOM SHOWN ON ARCHITECTURAL FLOOR PLANS, THE CONTRACTOR SHALL VERIFY EXISTING EXHAUST GRILLES AND RELATE WITH NEW GENERALLY NEW T-BAR CEILINGS WILL BE INSTALLED IN ALL OF THE RENOVATED WASHROOMS AND AS SUCH, THE SHEET METAL CONTRACTOR WILL NEED TO EXTEND THE EXISTING GRILLE BRANCH DOWNWARD TO SUIT THE NEW T-BAR CEILING.
 - REFER TO THE ARCHITECTURAL CEILING PLANS FOR LOCATIONS OF THE EXISTING GRILLES TO BE REPLACED WITH NEW. FIELD VERIFY ALL EXISTING GRILLE SIZES. NEW GRILLES TO BE EQUAL TO AN EH. RACE MODEL 559 LOUVERED GRILLE.
 - BEFORE COMMENCING ANY SHEET METAL WORK, THE MECHANICAL CONTRACTOR SHALL CHECK THE CONDITION AND OPERATION OF THE EXISTING EXHAUST GRILLES AND RELATE WITH NEW FINDINGS. REPAIRS AND/OR REPLACEMENT OF ANY EXISTING FANS SHALL BE AUTHORIZED BY CHANGE ORDER AND ONLY AFTER A DETAILED ITEMIZED QUOTATION IS SUBMITTED AND APPROVED.
 - PROVIDE SHOP DRAWINGS IN ELECTRONIC FORMAT FOR ALL HVAC EQUIPMENT.

PRELIMINARY - NOT FOR CONSTRUCTION

NEW NUMBER REFERENCE SHEET

CALLOUT BUBBLE - GUIDE

Callout bubble not responsible for dimensions of work, and the other dimensions shown in the callout bubble shall be taken from the corresponding drawing unless otherwise noted.

The drawing is NOT to be used as a substitute for the contract documents.

Construction must conform to all applicable codes and requirements of the authority having jurisdiction.

The contractor shall ensure that all dimensions are as shown on the drawing unless otherwise noted. The contractor shall ensure that all dimensions are as shown on the drawing unless otherwise noted.

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HARROW, ONTARIO

Project Name: **G.P.C.R.C WASHROOM UPGRADES**
HARROW, ONTARIO

Drawn By: **AB**
Checked By: **IS**
Scale: **1/4"=1'-0"**

Sheet No: **A614** of **M101**

Project: **MENS WASHROOM 'D' & H/C WASHROOM 'E' WASHROOM 'PLANS'**



Appendix "F"

INSURANCE TERMS

INSURANCE TERMS

- IN1 GENERAL
 - IN1.1 Worker's Compensation
 - IN1.2 Indemnification
 - IN1.3 Proof of Insurance
 - IN1.4 Insured
 - IN1.5 Payment of Deductible

- IN2 COMMERCIAL GENERAL LIABILITY
 - IN2.1 Scope of Policy
 - IN2.2 Period of Insurance

- IN3 AUTOMOBILE INSURANCE
 - IN3.1 Scope of Policy

- IN4 BUILDER'S RISK / INSTALLATION FLOATER
 - IN4.1 Scope of Policy
 - IN4.2 Amount of Insurance
 - IN4.3 Period of Insurance
 - IN4.4 Insurance Proceeds

IN1 GENERAL

IN1.1 Worker's Compensation

- 1) The Contractor shall provide and maintain Worker's Compensation Insurance in accordance with the legal requirements of the Province or Territory where the work is being carried out.

IN1.2 Indemnification

- 1) The insurance required by the provisions of these Insurance Terms shall in no way limit the Contractor's responsibility under the Indemnification clause of the General Conditions of the contract. Any additional coverage the Contractor may deem necessary to fulfill his obligations under the aforesaid clause shall be at his own discretion and expense.

IN1.3 Proof of Insurance

- 1) Before commencement of the Work, and within thirty (30) days after acceptance of its bid, the Contactor shall deposit with Canada a CERTIFICATE OF INSURANCE (form AAFC / AAC5314) available upon request.
- 2) Upon request by Canada, the Contractor shall provide originals or certified true copies of all contracts of insurance maintained by the Contractor pursuant to the provisions contained herein.

IN1.4 Insured

- 1) Each policy shall insure the Contractor and shall include Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture & Agri-Food Canada as an additional Insured, with respect to liability arising out of the operations of the contractor with regard to the work.

INSURANCE TERMS (Continued)

IN1.5 Payment of Deductible

- 1) The payment of monies up to the deductible amount made in satisfaction of a claim shall be borne by the Contractor.

IN2 COMMERCIAL GENERAL LIABILITY

IN2.1 Scope of Policy

- 1) The insurance coverage provided shall not be less than that provided by IBC Form 2100, as amended from time to time, and shall have:
 - (a) an Each Occurrence Limit of not less than \$5,000,000.00 ;
 - (b) a Products/Completed Operations Aggregate Limit of not less than \$5,000,000.00 ; and
 - (c) a General Aggregate Limit of not less than \$10,000,000.00 per policy year, if the policy is subject to such a limit.
- 2) The policy shall either include or be endorsed to include coverage for the following exposures or hazards if the Work is subject thereto:
 - (a) Blasting.
 - (b) Pile driving and caisson work.
 - (c) Underpinning.
 - (d) Removal or weakening of support of any building or land whether such support be natural or otherwise if the work is performed by the insured contractor.
 - (e) Asbestos.
 - (f) Non-owed Automobile Policy.

IN2.2 Period of Insurance

- 1) Unless otherwise directed in writing by Canada, or, otherwise stipulated elsewhere herein, the policy required herein shall be in force and be maintained from the date of contract award until the day of issue of the Certificate of Completion except that the coverage for Completed Operations Liability shall, in any event, be maintained for a period of at least six (6) years beyond the date of the CERTIFICATE OF SUBSTANTIAL PERFORMANCE.

IN3 AUTOMOBILE INSURANCE

IN3.1 Scope of Policy

- 1) Automobile Liability Insurance in respect of licensed vehicles shall have limits of not less than one million dollars inclusive per occurrence for bodily injury, death, and damage to property.

INSURANCE TERMS (Continued)

IN4 BUILDER'S RISK / INSTALLATION FLOATER

IN4.1 Scope of Policy

- 1) The insurance coverage provided by a Builder's Risk policy or an Installation Floater policy shall not be less than that provided by IBC Forms 4042 and 4047, as amended from time to time.
- 2) The policy shall permit use and occupancy of the project, or any part thereof, where such use and occupancy is for the purposes for which the project is intended upon completion.
- 3) The policy may exclude or be endorsed to exclude coverage for loss or damage caused by any of the following:
 - (a) Asbestos.
 - (b) Fungi or spores.
 - (c) Cyber.
 - (d) Terrorism.

IN4.2 Amount of Insurance

- 1) The amount of insurance shall not be less than the sum of the contract value plus the declared value (if any) set forth in the contract documents of all material and equipment supplied by Canada at the site of the project to be incorporated into and form part of the finished Work. If the value of the Work is changed, the policy shall be changed to reflect the revised contract value.

IN4.3 Period of Insurance

- 1) Unless otherwise directed in writing by Canada, or, stipulated elsewhere herein, the policy required herein shall be in force and be maintained from prior to the commencement of work until the day of issue of the CERTIFICATE OF SUBSTANTIAL PERFORMANCE.

IN4.4 Insurance Proceeds

- 1) The policy shall provide that the proceeds thereof are payable to Her Majesty or as Canada may direct in accordance with GC 10.2 Insurance Proceeds.
- 2) The Contractor shall, without delay, do such things and execute such documents as are necessary to effect payment of the proceeds.



Appendix "G"

CONTRACT DOCUMENTS

MAJOR WORKS - CONTRACT DOCUMENTS

SC01 CONTRACT DOCUMENTS

- 1) The following are the contract documents:
 - (a) Contract page when signed by Canada;
 - (b) Duly completed Bid and Acceptance Form and any Appendices attached thereto;
 - (c) Drawings and Specifications;
 - (d) AAFC General Conditions form AAFC / AAC5321-E:
 - (i) GC1 General Provisions
 - (ii) GC2 Administration of the Contract
 - (iii) GC3 Execution and Control of the Work
 - (iv) GC4 Protective Measures
 - (v) GC5 Terms of Payment
 - (vi) GC6 Delays and Changes in the Work
 - (vii) GC7 Default, Suspension or Termination of Contract
 - (viii) GC8 Dispute Resolution
 - (ix) GC9 Contract Security
 - (x) GC10 Insurance
 - (e) Supplementary Conditions, if any;
 - (f) Insurance Terms form AAFC / AAC5315-E;
 - (g) Any amendment issued or any allowable bid revision received before the date and time set for solicitation closing;
 - (h) Any amendment incorporated by mutual agreement between Canada and the Contractor before acceptance of the bid; and
 - (i) Any amendment or variation of the contract documents that is made in accordance with the General Conditions.
- 2) The language of the contract documents shall be the language of the Bid and Acceptance Form submitted.

SC02 ACCEPTANCE AND CONTRACT

- 1) Upon acceptance of the Contractor's offer by Canada, a binding Contract shall be formed between Canada and the Contractor. The documents forming the Contract shall be the contract documents referred to in SC01 CONTRACT DOCUMENTS.



Appendix "H"

CONTRACT

CONTRACT

PURCHASING OFFICE

Agriculture and Agri-Food Canada
 Eastern Service Centre
 Tender Receiving Unit
 2001 University Street., Suite 671-TEN
 Montréal, Quebec
 H3A 3N2

Your tender is accepted to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the construction listed herein and on any attached sheets at the price or prices set out therefor.

Comments

Vendor / Firm Name and Address

Title		
Solicitation / Contract No.		Date
Client Reference No.		
File No.		
Financial Code(s)		<input type="radio"/> GST <input type="radio"/> HST <input type="radio"/> QST
F.O.B Destination		
Applicable Taxes Included		
Destination		
Invoices - Original and two copies to be sent to :		
Address Enquiries to:		
Telephone No.	Ext.	Fax No.
Total Estimated Cost		Currency Type CAD
For the Minister		
Signature		Date



FORMS

- Bid Bond
- Certificate of Insurance
- Labour and Material Payment Bond
- Performance Bond
- T4-A Certification

BID BOND

BOND NUMBER: _____

AMOUNT: _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____ as Principal,
hereinafter called the Principal, and _____ as Surety,

hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in right of Canada as represented by the Minister of Agriculture and Agri-Food, as Obligee, hereinafter called the Crown, in the amount of

_____ dollars (\$ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20__.

WHEREAS, the Principal has submitted a written tender to the Crown, dated the _____ day of _____, 20__,

for _____

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that if:

- (a) the Principal, should his tender be accepted within the period specified by the Crown, or, if no period be specified, within sixty (60) days after closing date of the tender, does execute within a period specified by the Crown, or, if no period be specified therein, within fourteen (14) days after the prescribed forms are presented to him for signature, execute such further contractual documents, if any, as may be required by the terms of the tender as accepted, and does furnish a Performance Bond and a Labour and Material Payment Bond, each in the amount of 50% of the Contract price and satisfactory to the Crown, or other security acceptable to the Crown, or
- (b) the Principal does pay to the Crown the difference between the amount of the Principal's tender and the amount of the Contract entered into by the Crown for the work, supplies and services which were specified in the said tender, if the latter amount be in excess of the former,

then this obligation shall be void; otherwise it shall remain in full force and effect.

PROVIDED, HOWEVER, that the Surety and the Principal shall not be liable to the Crown for an amount greater than the amount specified in this bond.

PROVIDED FURTHER that the Surety shall not be subject to any suit or action unless such suit or action is instituted and process therefore served upon the Surety at its Head Office in Canada, within twelve (12) months from the date of this bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

Principal

Witness

Surety

Note: Affix Corporate seal if applicable.



CERTIFICATE OF INSURANCE

To be completed by the Insurer

CONTRACT					
Description and location of work					Contract No.
					Project No.
INSURER			BROKER		
Company name			Company name		
Unit/Suite/Apt.	Street number	Number suffix	Unit/Suite/Apt.	Street number	Number suffix
Street name			Street name		
Street type	Street direction	PO Box or Route Number	Street type	Street direction	PO Box or Route Number
Municipality (City, Town, etc.)			Municipality (City, Town, etc.)		
Province/State	Postal/ZIP code		Province/State	Postal/ZIP code	
INSURED			ADDITIONAL INSURED		
Contractor name			Her Majesty the Queen in right of Canada as represented by the Minister of Agriculture and Agri-Food Canada.		
Unit/Suite/Apt.	Street number	Number suffix			
Street name					
Street type	Street direction	PO Box or Route Number			
Municipality (City, Town, etc.)					
Province/State	Postal/ZIP code				
This insurer certifies that the following policies of insurance are at present in force covering all operations of the Insured, in connection with the contract made between the named insured and Her Majesty the Queen in right of Canada, represented by the Minister of Agriculture and Agri-Food Canada.					
POLICY					
Type	Number	Inception date	Expiry date	Limit of liability (\$)	
Commercial General Liability					
Builder's Risk "All Risks"					
Installation Floater "All Risks"					
Other (list)					
Each of these policies includes the coverages and provisions as specified in Insurance Terms and each policy has been endorsed to cover Her Majesty as an Additional Insured. The Insurer agrees to notify Her Majesty and the Named insured in writing thirty (30) days prior to any material change in, or cancellation of any policy or coverage.					
Name of Insurer's Officer or Authorized Employee		Telephone number		Ext.	
Signature		Date			

LABOUR AND MATERIAL PAYMENT BOND

BOND NUMBER: _____

AMOUNT: _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____ as Principal,
hereinafter called the Principal, and _____ as Surety,

hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in right of Canada as represented by the Minister of Agriculture and Agri-Food, as Obligee, hereinafter called the Crown, in the amount of

_____ dollars (\$ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20__

WHEREAS, the Principal has entered into a Contract with the Crown dated the _____ day of _____, 20__,
for _____

which contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if payment is promptly made to all Claimants who have performed labour or services or supplied material in connection with the Contract and any and all duly authorized modifications and extensions of the Contract that may hereafter be made, notice of which modifications and extensions to the Surety being hereby waived, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. For the purpose of this bond, a Claimant is defined as one having a direct contract with the Principal or any Sub-Contractor of the Principal for labour, material or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone services or rental of equipment (but excluding rental of equipment where the rent pursuant to an agreement is to be applied towards the purchase price thereof) directly applicable to the Contract.
2. For the purpose of this Bond, no payment is required to be made in respect of a claim for payment for labour or services performed or material supplied in connection with the Contract that represents a capital expenditure, overhead or general administration costs incurred by the Principal during the currency or in respect of the Contract.
3. The Principal and the Surety hereby jointly and severally agree with the Crown that if any Claimant has not been paid as provided for under the terms of his contract with the Principal or a Sub-Contractor of the Principal before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's labour or service was done or performed or materials were supplied by such Claimant, the Crown may sue on this bond, have the right to prosecute the suit to final judgment for such sum or sums as may be due and have execution thereon; and such right of the Crown is assigned by virtue of Part VIII of the *Financial Administration Act* to such Claimant.
4. For the purpose of this bond the liability of the Surety and the Principal to make payment to any claimant not having a contract directly with the Principal shall be limited to that amount which the Principal would have been obliged to pay to such claimant had the provisions of the applicable provincial or territorial legislation on lien or privileges been applicable to the work. A claimant need not comply with provisions of such legislation setting out steps by way of notice, registration or otherwise as might have been necessary to preserve or perfect any claim for lien or privilege which the claimant might have had. Any such claimant shall be entitled to pursue a claim and to recover judgment hereunder subject to the terms and notification provisions of the Bond.
5. Any material change in the Contract between the Principal and the Crown shall not prejudice the rights or interest of any Claimant under this Bond who is not instrumental in bringing about or has not caused such change.

6. No suit or action shall be commenced hereunder by any Claimant:

- (a) Unless such Claimant shall have given written notice within the time limits hereinafter set forth to the Principal and the Surety above named, stating with substantial accuracy the amount claimed. Such notice shall be served by mailing the same by registered mail to the Principal and the Surety at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or other part of Canada in which the subject matter of the Contract is located. Such notice shall be given
 - (i) in respect of any claim for the amount or any portion thereof required to be held back from the Claimant by the Principal or by the Sub-Contractor of the Principal under either the terms of the Claimant's Contract with the Principal or the Claimant's Contract with the Sub-Contractor of the Principal within one hundred and twenty (120) days after such Claimant should have been paid in full under this Contract;
 - (ii) in respect of any claim other than for the holdback or portion thereof referred to above within one hundred and twenty (120) days after the date upon which such Claimant did or performed the last of the service, work or labour or furnished the last of the materials for which such claim is made under the Claimant's Contract with the Principal or a Sub-Contractor of the Principal;
- (b) After the expiration of one (1) year following the date on which the Principal ceased work on the said Contract, including work performed under the guarantees provided in the Contract;
- (c) Other than in a court of competent jurisdiction in the province or district of Canada in which the subject matter of the Contract or any part thereof is situated and not elsewhere, and the parties hereto hereby agree to submit to the jurisdiction of such court.

7. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder.

8. The Surety shall not be entitled to claim any moneys relating to the Contract and the liability of the Surety under this Bond shall remain unchanged and, without restricting the generality of the foregoing, the Surety shall pay all valid claims of Claimants under this Bond before any moneys relating to the Contract held by the Crown are paid to the Surety by the Crown.

9. The Surety shall not be liable for a greater sum than the amount specified in this bond.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

Principal

Witness

Surety

Note: Affix Corporate seal if applicable.

PERFORMANCE BOND

BOND NUMBER: _____

AMOUNT: _____

KNOW ALL PERSONS BY THESE PRESENTS, that _____ as Principal,
hereinafter called the Principal, and _____ as Surety,

hereinafter called the Surety, are, subject to the conditions hereinafter contained, held and firmly bound unto Her Majesty the Queen in right of Canada as represented by the Minister of Agriculture and Agri-Food, as Obligee, hereinafter called the Crown, in the amount of

_____ dollars (\$ _____), lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SIGNED AND SEALED this _____ day of _____, 20__.

WHEREAS, the Principal entered into a Contract with the Crown dated the _____ day of _____, 20__,
for _____

which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITIONS OF THIS OBLIGATION are such that, if the Principal shall well and faithfully observe and perform all the obligations on the part of the Principal to be observed and performed in connection with the Contract, then this obligation shall be void, otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. Whenever the Principal shall be, and declared by the Crown to be, in default under the Contract, the Surety shall:
 - (a) if the work is not taken out of the Principal's hands, remedy the default of the Principal,
 - (b) if the work is taken out of the Principal's hands and the Crown directs the Surety to undertake the completion of the work, complete the work in accordance with the Contract provided that if a contract is entered into for the completion of the work,
 - (i) it shall be between the Surety and the completing contractor, and
 - (ii) the selection of such completing contractor shall be subject to the approval of the Crown,
 - (c) if the work is taken out of the Principal's hands and the Crown, after reasonable notice to the Surety, does not direct the Surety to undertake the completion of the work, assume the financial responsibility for the cost of completion in excess of the moneys available to the Crown under the Contract,
 - (d) be liable for and pay all the excess costs of completion of the Contract, and
 - (e) not be entitled to any Contract moneys earned by the Principal, up to the date of his default on the Contract and any holdbacks relating to such earned Contract moneys held by the Crown, and the liability of the Surety under this Bond shall remain unchanged provided, however, and without restricting the generality of the foregoing, upon the completion of the Contract to the satisfaction of the Crown, any Contract moneys earned by the Principal or holdbacks related thereto held by the Crown may be paid to the Surety by the Crown.
2. The Surety shall not be liable for a greater sum than the amount specified in this Bond.
3. No suit or action shall be instituted by the Crown herein against the Surety pursuant to these presents after the expiration of two (2) years from the date on which final payment under the Contract is payable.

IN TESTIMONY WHEREOF, the Principal has hereto set its hand and affixed its seal, and the Surety has caused these presents to be sealed with its corporate seal duly attested by the signature of its authorized signing authority, the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

Principal

Witness

Surety

Note: Affix Corporate seal if applicable.



T4-A CERTIFICATION

The Contractor shall complete and submit this T4-A Certification within fourteen (14) calendar days of Notification of Contract award and within fourteen (14) calendar days immediately following any change to the information already provided under the Contract. Failure to provide this information or failure to provide the correct information shall result in a fundamental breach of the Contract.

1. **The Contractor shall enter a [x] in one of the boxes below opposite the description that best describes its status.**

- A business incorporated either federally or provincially;
- An unincorporated business, either as a sole proprietor or a partnership; or
- An individual.

Note: The information provided in Section 2 must correspond with that provided in Section 1.

Corporate or unincorporated business or individual's name: _____

Street Name or Box #: _____

City, Town or Village: _____

Province: _____

Postal Code: _____

2. **Contractor shall complete Section 2(a) or 2(b) or 2(c), whichever is applicable to its situation.**

(a) If incorporated:

Business Number (BN): _____, or
GST / HST Number: _____, or
T2 Corporation Tax Number (T2N): _____, whichever is applicable

(b) If unincorporated:

Social Insurance Number (SIN): _____, and
Business Number (BN): _____, or
GST / HST Number: _____, whichever is applicable

Note: The Unincorporated Business Name must be the same as the name associated with the Revenue Canada Business Number or the GST Number.

(c) If individual:

Social Insurance Number (SIN): _____, and
Business Number (BN): _____, or
GST / HST Number: _____, whichever is applicable

Note: The Individual's Name must be the same as the name associated with the Social Insurance Number.

3. **WE HEREBY CERTIFY** that I/We have examined the information provided above, including the legal name, address and Revenue Canada identifier (SIN, BN, GST / HST No., T2N), as applicable, and that it is correct and complete, and fully discloses my/our identification.

Contractor's signature	Title of Signatory	Date
------------------------	--------------------	------